The Plough, the Loom, and the Anvil.

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THE HARMONY OF INTERESTS:

AGRICULTURAL, MANUFACTURING, AND COMMERCIAL.

IN the following letters, which cannot fail to command the attention of all impartial inquirers, the reader will recognise the perspicuous and comprehensive views of the writer to whom we have been so frequently and so much indebted for the able disquisitions that have enriched our pages, on the same subject. It is easy to prejudge and denounce, but quite another thing to study and to answer, such reasoning. All we ask is that the farmer and planter enter on the perusal of these letters with an eye solely to the *discovery of the truth;* divested of all party bias, and regardless of all party objects. In that spirit, if we know ourselves, is this journal strictly conducted.

DEAR SIR:—I would gladly furnish replies to the questions contained in your circular of August last, did I possess any information on the subject of my own knowledge, but I do not. Although generally informed as to the working of the ad valorem system established by the tariff of 1846, my knowledge has been derived from others, from whom you will receive it; and it would therefore be useless to trespass upon your time with any thing that I could say on the subject. To the general working of the several revenue systems since the peace of 1815, I have, however, given some attention, having been very desirous to satisfy myself as to the effects of the protective and free-trade systems in the remuneration of the labourer; and as that is the great question now to be settled, the results of my inquiries may be useful to you.

Of the advantage of perfect freedom of trade, theoretically considered, there could be no doubt. The benefit derived from such freedom in the intercourse of the several States, was obvious to all; and it would certainly seem that the same system so extended as to include the commerce with the various states and kingdoms of the world could not fail to be attended with similar results. Nevertheless, every attempt at so doing had failed. The low duties on most articles of merchandise in the period between 1816 and 1827, had produced a state of things which induced the establishment of the first really protective tariff, that of 1828. The approach to almost perfect freedom of trade in 1840, produced a political revolution, and a similar but more moderate measure, led to the revolution of last year. These were curious facts, and such as were deserving of careful examination.

It may be assumed as an universal truth, that every step made in the right direction will be attended with results so beneficial as to pave the way for further steps in the same direction, and that every one made in the wrong direction will be attended with disadvantageous results tending to produce a necessity for a retrograde movement. The compromise bill, in its final stages, was a near approach to perfect freedom of trade, the highest duty being only 20 per cent. Believing it to be a step in the right direction, one of the enthusiastic advocates of perfect freedom of trade proposed, soon after its passage, that, commencing with 1842, there should be a further reduction of one per cent. per annum for twenty years, at the end of which time all necessity for custom-houses would have disappeared. With the gradual operation of the earlier stages of that bill there was, however, produced a state of depression so extraordinary as to lead to a political change before reaching its final stages;

and the duties had scarcely touched the point of 20 per cent. before they were raised to 30, 50, 60, or more, by the passage of the tariff of 1842. With the election of 1844, the friends of free trade were restored to power, and two years afterwards was passed the tariff of 1846—the free-trade measure—in which the revenue duty on articles to be protected was fixed at *thirty* per cent. Here was a retrograde movement. Instead of passing from twenty downwards, we went up to thirty, and thus was furnished an admission that so near an approach to free trade with foreign nations as was to be found in twenty per cent. duties had not answered in practice. Since then, it has been admitted, even by the most decided free-trade advocates, that on certain commodities even thirty per cent. was too low, and within six months from the date of the passage of the act of 1846, its author proposed to increase a variety of articles to thirty-five and forty per cent.* Here was another retrograde movement. It is now admitted that there are other articles the duties on which require to be raised, and daily experience goes to prove that such must be the case, or we must abandon some of the most important branches of industry. The tendency is, therefore, altogether backward. Thirty per cent. duty is now regarded as almost perfect freedom of trade, and instead of proposing a further annual reduction, each year produces a stronger disposition for a considerable increase. In all this, it is impossible to avoid seeing that there is great error somewhere, and almost equally impossible to avoid feeling a desire to understand why it is that the approaches towards freedom of trade with foreign nations have so frequently failed, and why it is that every strictly revenue tariff is higher than that which preceded it.

With a view to satisfy myself in regard thereto, I have recently made the examination, before referred to, of our commercial policy during the last twenty-eight years, commencing with 1821, being the earliest in relation to which detailed statements have been published. Before commencing to lay before you the results obtained, it may be well to say a few words as to the merits claimed by the two parties for their respective systems.

The one party insists that protection is "a war upon labour and capital," and that by compelling the application of both to pursuits that would otherwise be unproductive, the amount of necessaries, comforts, and conveniences of life obtainable by the labourer is diminished. The other insists that by protecting the labourer from competition with the ill-fed and worse-clothed workmen of Europe, the reward of labour will be increased. Each has thus his theory, and each is accustomed to furnish facts to prove its truth, and both can do so while limiting themselves to short periods of time, taking at some times years of small crops, and at others those of large ones, and thus it is that the inquirer after truth is embarrassed.† No one has yet, to my knowledge, ever undertaken to examine all the facts during any long period of time, with a view to show what have been, under the various systems, the powers of the labourer to command the necessaries and comforts of life. One or other of the systems is true, and that is true under which labour is most largely rewarded: that under which the labourer is enabled to consume most largely of food, fuel, clothing, and all other of those good things for the attainment of which men are willing to labour. If, then, we can ascertain the power of consumption at various periods, and the result be to show that it has invariably increased under one course of action, and as invariably diminished under another, it will be equivalent to a demonstration of the

* Treasury Report, Feb. 1, 1847.

† A person employed in the preparation of government statistics inquired, on being asked to prepare some tables, what was to be the policy to be proved. "Why," said the other, "could you prove both sides?" "Equally well," said he.

truth of the one and the falsehood of the other. To accomplish this, has been the object of the inquiry in which I have recently been engaged.

It is necessary now to show what have been the distinguishing features of the several systems that have been in operation during the period to be examined. They are as follows:—

First. The tariff of 1816 was a planters' and farmers' measure. Cotton and coarse cotton cloths were carefully protected. Iron itself was well protected, but almost all manufactures of iron, the commodities for the production of which pig or bar iron could be used, were admitted at 20 per cent. Wool paid 15 per cent. Blankets and woollen and stuff goods paid 15 per cent., and finer goods 25 per cent., until 1819, after which they paid but 20 per cent. Spirits paid a heavy specific duty, for the benefit of the farmers; but paper, hats, caps, manufactures of leather, types, and manufactured articles generally, paid only from 20 to 30 per cent. Coal paid 5 cents per bushel, but the commodities in the manufacture of which coal was to be used paid ad valorem duties. Protection was thus given to the coarse commodities that least required it, and refused to those for the production of which the coarser ones were to be used. As a matter of course, its protective features were totally inoperative.

Second. That of 1824, under which iron was, as before, well protected, but manufactures of iron, and of metals generally, were admitted at 25 per cent. Wool was raised to 20 per cent., to increase, by successive stages, until it reached 30 per cent. Coarse woollens were fixed permanently at 25 per cent. Finer ones were to rise gradually until they reached 33⅓ per cent. Carpets paid from 20 to 50 cents per square yard. Hams paid 3, and butter 5 cents per pound. Potatoes 10, oats 10, and wheat 25 cents per bushel; while scythes, spades, shovels, and other things requisite for the raising of wheat and potatoes, paid 30 per cent. Spirits were carefully protected. Bolting cloths paid 15 per cent. Sail-duck, Osnaburgs, &c., 15 per cent. Cotton cloths paid 25 per cent., with a minimum of 30 cents per yard. The general features of this law did not vary materially from those of that of 1816, although protection was slightly increased.

Third. The first tariff thoroughly protective, and so intended to be, was that of 1828. It continued until 1832, when was passed the first of two laws by which the whole policy of the country was changed. This series constitutes stage the

Fourth. By the act of July 14, 1832, railroad iron was admitted free of duty. Axes, spades, &c., as before, 30 per cent. Bar and pig iron were carefully protected, but a large portion of the commodities for which they were needed were thus admitted without duty, or at the same rate as under our present free-trade tariff. Tea and coffee were free. Silks paid 10 per cent. Wool was protected, but worsted stuff goods were admitted at 10 per cent. Cotton goods paid 25 per cent., with minimums of 30 cents for plain and 35 for prints. This continued in force until the following March, when was passed *the Compromise Act*, under which linens, stuff goods, silks, and other articles were admitted free of duty, and one-tenth of the excess over 20 per cent. reduced from all other commodities, to take effect December, 1833, with a further similar reduction every two years until 1841, when one-half of the remaining surplus was to be reduced, and the other half in 1842, when no duty would exceed 20 per cent.

Fifth. The protective tariff of 1842, which was followed by

Sixth. The free trade tariff of 1846, now in existence.

We have thus had six different systems, but the first and second differ from each other so little that it is unnecessary to separate the years falling under them, whereas the early years of the Compromise differ so essentially

from the two latter that it is expedient to separate them. I shall therefore group the results as follows:—

First. The tariffs of 1816 and 1824, ending with 1829.

Second. That of 1828, commencing with October, 1829, and ending with the period at which the Compromise began to become operative, October, 1834.

Third. The Compromise, commencing with 1835 and ending with 1841.

Fourth. The years 1842 and 1843, the period immediately preceding and following the passage of the act of 1842, being that of the strictly revenue tariff of 20 per cent.

Fifth. The tariff of 1842, commencing June, 1843, and ending June, 1847.

Sixth. That of 1846, commencing June, 1847, and coming down to the present time.

It will be observed that I have placed the year 1829 in the first period, and 1834 in the second. It is not the passage of an act that produces change, but its practical operation, and the first year of the existence of a new system is but the sequel of that which is passing out. When protection is given to the makers of cloth and iron, mills and furnaces are not built in a day, nor are they abandoned as soon as protection is withdrawn. Had it been possible, I would have pursued the same precise system with every period, but it was not. The act of 1842 came into operation on the first of September of that year, and in the following one the time for making up the Treasury accounts was changed to June 30, and therefore only the first ten months that followed its going into effect could be included under the previous period. That of 1846 did not come into effect until December 1, and therefore but the first seven months that followed could be included in the system of 1842. The law of 1842 was in existence four years and a quarter, but I could give it only four years, which works materially to its disadvantage, and to the advantage of that of 1846.

In some cases even more than a year would be required to make an exact comparison of the working of the different systems. The immigration of one year is materially influenced, perhaps I might say determined, by the state of the labour-market of the previous year, and the change in that is at least a year subsequent to the passage of a law. Thus, if the tariff of 1842 tended to raise the compensation of the labourer, its effects would not become obvious until 1843, and it would not be until 1844 or even 1845, that an increase of immigration would take place. The price of labour was high in 1847–8, and we have a large amount of immigration in 1849. It is now falling, and the immigration of next year will probably be reduced.

So likewise is it with the supply of grain. A diminution in the demand for labour in mines and furnaces in 1842 tended to increase emigration to the West. For the first year, 1843, those emigrants were consumers only. In the second, 1844, they had grain to sell, and prices fell. In the present year, the demand for labour in mines and furnaces, and in the erection of mills and furnaces, is diminished, and emigration to the West is increased, yet the effect of this on the supply and price of food may not, and probably will not become obvious until 1851.

Your predecessor appears entirely to have overlooked this necessity for allowing time to permit new systems to develope themselves, and to affect the movements of the people. In his last report to Congress is given a comparative view of the receipts from customs in the last six months of the tariff of 1842, and the first six of that of 1846, by which it is shown that the one was twice as productive as the other, and yet very slight reflection would have sufficed to satisfy him that scarcely any portion of the difference

had resulted from the change of commercial policy indicated by the adoption of his tariff. The amount that could be imported and paid for was dependent on the state of affairs that had existed in the country during the previous year, and the passage of the law had scarcely even the slightest influence upon it. In the same way, the receipts from customs from September, 1842, to November, 1846, are compared with those of 1847 and 1848, when it is well known that in 1842, under the Compromise, the imports had fallen so low that the government was compelled to send to Europe to endeavour to effect a loan for its support even in a time of profound peace. If a cause has right on its side, such erroneous views cannot be required to be presented. In the tables that I shall now offer for consideration, I have pursued, as nearly as possible, a uniform course, commencing each period at the time at which the system might fairly be deemed to become operative, to wit: at the close of the fiscal year following the one in which the law was enacted. If error, then, exist at the commencement of the period, it will find its compensation at the close, and thus justice will be done to all.

There still remain two other points in regard to these tables, to which I have to ask your attention.

First. It is usual in almost all tables of import and export to exclude specie and bullion. This is wrong, and tends to produce error, and to prevent a proper understanding of the working of the system that may be under consideration. Gold and silver are commodities produced abroad, of which we consume large quantities, occasionally exporting the surplus; and there is no reason whatever why they should not be treated precisely as are coffee, wines, brandy, and other foreign commodities. When they are imported they come in exchange for our products, and the sum of merchandise and specie imported is the value of our exports. When exported, they go in lieu of our products, and should be treated as foreign merchandise re-exported. By deducting them from the value of the merchandise imported we obtain the value of our domestic exports.

Second. It is usual to affix to the commodities exported arbitrary prices, and thus to obtain their money value. These prices are fixed at the ports of shipment, and represent only what *we ask* for the commodities we have to sell, not what *we get* for them. They represent, too, the prices *minus* the earnings of the machinery employed in performing the work of transportation, which must then be guessed at. The consequence of all this is, that the tables published by the Treasury are totally worthless as guides to a proper understanding of the general course of trade. What is needed to obtain such an understanding is that the nation make out its accounts as it would do if it were a merchant, putting down not the price asked but the price received, and then balancing its books by ascertaining whether the year's business has increased or diminished its debts. The amount received for our exports constitutes their precise value, and to ascertain what is that amount we should take the value of merchandise imported, deducting therefrom any debt contracted, or adding thereto any debt paid off, during the year. Thus, if the imports be $100,000,000, and the debt contracted by the transfer of stocks has been $10,000,000, the amount paid for by our exports is only $90,000,000. On the contrary, if we have paid off that amount of debt, it should be added, and we should thus obtain $110,000,000 as the true value of the produce and merchandise exported. The freights are thus included.

To carry this fully into practice in the following tables would be impracticable, but it may be done in part. It is generally understood that the amount of American stocks, public and private, held in Europe in 1841 exceeded $200,000,000, and there is reason to believe that they exceeded

by $170,000,000 the amount held in November, 1834, when the great stock speculation commenced.* By deducting this sum from the merchandise imported between the close of 1834 and the year 1841, we shall obtain the value of produce and merchandise exported. A part of this debt was absorbed in the years 1845, 1846, and 1847, while on the other hand new debts were created last year, and are now being created by the transmission of evidences of debt. To the imports of the three first named should be added the debt absorbed, and from those of the last two years should be deducted the debt created, and we should then obtain the actual amount paid for by produce and domestic merchandise exported, and by the shipping employed in the work of transportation.

There are other and earlier years in which corrections might be required, but they are of trifling amount by comparison with those to which I have referred. In those years small loans were made, but it is probable that nearly as much was paid off, except perhaps in 1825, in which a considerable amount of European debt was created. The amount, however, is so uncertain that I have not thought it worth while to make any correction therefor; although to do so might, and perhaps would, produce a sensible diminution in the value received for our produce exported prior to 1829, which would thereby be placed in a somewhat worse position than that in which I have represented it.

With these remarks, I will now proceed to lay before you the results of my inquiries. In doing so, I will give every fact that appears to me likely to throw light on this important question, concealing nothing. If, then, those who have arrived at conclusions different from mine, and are in possession of other facts, will put them together as I now do, we may by degrees arrive at the truth. It is the great question for the nation, and it is time that it should be examined as a purely scientific, and not as a party or sectional one.

LETTER SECOND.

The average population of the Union in the several periods referred to, is thus estimated in the last Treasury Report:†

First. For the years from that ending Dec. 31, 1821, to that of Dec. 31, 1829	11,247,000
Second. From Sept. 1829, to Sept. 1834‡	13,698,000
Third. From Sept. 1834, to Sept. 1841	16,226,000
Fourth. From Sept. 1841, to June, 1843	18,296,000
Fifth. From June, 1843, to June, 1847‡	19,771,000
Sixth. From June, 1847, to June, 1848	21,000,000
Seventh. From June, 1848, to June, 1849	21,700,000

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* Report of Select Committee on Banks of Issue: Evidence of Mr. I. Horsley Palmer, page 106.

† Page 68.

‡ As these years are frequently referred to separately, I give their population, on the same authority:—

1830–'31	12,856,165	1843–'44	19,034,332
1831–'32	13,377,415	1844–'45	19,525,749
1832–'33	13,698,665	1845–'46	20,017,165
1833–'34	14,119,915	1846–'47	20,508,582
1834–'35	14,541,165	1847–'48	21,000,000

The amount of foreign merchandise, specie included,* consumed in these several periods, has been as follows:—

		Total.	Annual Average.	Pr. head.
1821 to 1829		$508,000,000	56,400,000	$5·00
1830		55,500,000		4·32
1831		81,000,000		6·10
1832		75,500,000		5·51
1833		88,000,000		6·20
1834		103,000,000		7·08
1835 to 1841	854,000,000			
Deduct debt incurred	170,000,000	684,000,000	97,700,000	6·02
1842 to 1843 (21 months, ending June 30,)		145,000,000	82,000,000	4·48
1843–'44		96,000,000		5·03
1844–'45		101,000,000		5·16
1845–'46	110,000,000			
Add debt and back interest paid	5,000,000	115,000,000		5·75
1846–'47	138,000,000			
Do.	5,000,000	143,000,000		7
1847–'48	118,000,000			
Deduct debt incurred	8,000,000	110,000,000		5·25
1848–'49	†			
Do.	22,000,000			

The facts derivable from an examination of the above accounts are as follows:—

First. That the amount received from foreign nations in exchange for our surplus products largely increased during the existence of the tariff of 1828.

Second. That the amount so received diminished greatly after the Compromise Bill began to become operative.

Third. That the amount so received from foreign nations was still further and largely diminished under the strictly revenue clauses of that bill, and that the tendency was downward when the system was changed.

Fourth. That the amount so received increased rapidly under the tariff of 1842, attaining nearly the same point that had been reached under the tariff of 1828, and that in both cases the tendency was still upwards when the system was changed.

Fifth. That the amount so received diminished in the year 1848.

Seventh. That the amount of debt incurred in the last two years must tend to produce a further diminution in future ones.

In establishing the scale of value of our exports, including the earnings of shipping, the following is the order to be pursued:—

First, and lowest. The strictly revenue clauses of the Compromise Act.

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* The movement of specie in those periods was as follows:—

1821 to 1829, Excess export	$9,000,000	Deducted from the merchandise imported.
1830 to 1834, Excess import	25,000,000	Added thereto.
1835 to 1841, " "	27,000,000	do.
1842 and 1843, " "	20,000,000	do.
1844 to 1847, " "	18,000,000	do.
1848, Excess export	9,000,000	Deducted.
1849.		do.

† I have not been able to obtain the quantity.

Second. The partially protective tariffs of 1816 and 1824.
Third. The Compromise Act.
Fourth. The tariff of 1828.
Fifth, and highest. The tariff of 1842.

Thus far, the tariff of 1846 stands below that of 1842, and the tendency is downward, but to what place in the scale it will descend can be determined only after it shall have been some years in operation.

Such are the money values of our exports, but the question now arises—What quantity of commodities could be obtained in those several periods for that money? That I will now give as regards cotton-cloth, and iron, as follows:—

By a table* of the prices of goods exported from England, from 1830 to 1844, it appears that the average cost of two pieces of cloth, of the same description, one printed and the other plain, was as follows:—

	'30 to '34.	'35 to '41.	'42 and '43.	'44 to '47.
	19/10	18/	14/11	16/6
And the exports of 100 men in those periods would pay for, pieces of each . . .	126	138	140	145

It would thus appear that if the whole amount of our exports had been returned in cotton cloth, we should have received ten per cent. more in the period from 1835 to 1841 than in that from 1830 to 1834; eleven per cent. more in 1842 and 1843; and fourteen per cent. more in the period from 1844 to 1847. It is to be observed that during all this time there has been a constant diminution in the quantity of labour required for the conversion of wool into cloth, more than sufficient to account for the difference, and the important fact to be observed is, that the power to purchase foreign cloth does not increase in any proportion to the diminished price of cotton, so large a portion of the expenses after leaving the plantation tending to increase with the increased supply. Let us now look to iron.

The average price of iron in England was as follows:—†

	'21–'29.	'30–'34	'35–'41	'42–'43	'44–'47
	$44·76	28·80	41·00	24·84	39·64
The exports of 100 persons would therefore purchase, tons	11·4	20·3	14·6	14	14·5

Had the whole exports of the country been returned in iron, the quantity received in the period from 1830 to 1834 would have been almost double that received under the tariffs of 1816 and 1824, and exceeding by almost one-half that received in the period from 1835 to 1841, and that received in the years 1842 and 1843. We see also that notwithstanding the great railroad speculation of England, in the years from 1844 to 1847, the quantity that would have been received in that period would have been as great as at any other except the years of the tariff of 1828. It would thus appear that the value in iron of our surplus products exported was much greater in the longest period of protection than in any of the three periods of freer trade. What will be the average under the tariff of 1846 must be ascertained at a future time.

In my next I will proceed to examine the power of production and consumption in these several periods.

I am yours, very respectfully, HENRY C. CAREY.

Hon. WM. M. MEREDITH, *Secretary of the Treasury.*

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* Merchants' Magazine, Vol. IX. page 277.
† Ibid. Vol. XX. p. 337.

HOW THE "FREE-TRADE" SYSTEM WORKS WITH THE BRITISH FARMER.

A LATE writer in an English agricultural journal says to the editor, as below. Let the American farmer judge what his chance will be to contend in the great grain markets against the Odessa wheat grown by the serfs of Russia to feed the makers of English iron, to make our great railroad running through the iron mines and the coal mines of Alleghany:—

"The position of the foreign agriculturist, and the advantages he has over the English are pretty clearly shown in a letter from Mr. Thomas Brown on 'continental farming,' which you will find in the very next page of the same 'Gazette' that your article is published in. He therein states how much superior were the soil and climate, as well as the comparative freedom from the burden of taxes those countries through which he travelled were; but the English farmer has not so much cause to fear the competition of Belgium or France as from the more northern Continent of Europe—from Russia, Poland, Denmark, Sweden, &c., countries where corn can be grown at about half the cost it can be in Great Britain, and can be imported into our markets from theirs at such a price that must put it out of the possibility of our farmers competing with them. I have it from good authority, that Russian wheat can be laid down at Odessa for 18*s*. [$4·50 for 560 pounds, or more than nine bushels] the quarter, and when the freight is added to this, it can be imported into this country at from 24*s*. to 26*s*. the quarter, [$6 to $6·50 for 560 pounds, or more than nine bushels]. What chance then has the British farmer, as the gentleman whom you met on the railway returning from the Norwich meeting very fitly asked, what chance has he to compete with the foreigner? It is a question that can have but one answer. No, it is not the additional produce that he might possibly obtain by greater attention to the manure-heap, or the dung-water tank, or the quantity of grain that he might save from destruction by rats, that will enable him to stand upon an equal footing with his rival; he will need some stronger helps than these, to put him on a par with his antagonist; and unless those aids are rendered him, he must fight the losing game until he be forced to 'shut up,' as hundreds upon hundreds will do before that system will be overturned which shall have brought them to ruin. But that ultimately it will be upset, I have not a doubt, for it will bring its own destruction with it; but before that happens what a dreary aspect does the British farmer perceive to present and future prospects."

Drainage of Lands.—On this subject a pamphlet has been written in England lately, of which Dr. Lindley says:—

"This very interesting pamphlet contains the substance of a paper, on model and relief mapping as the best index to the capabilities of a surface, which was read before the Society of Arts during the past session. The main point on which Mr. Denton insists, in that part of his performance which relates to drainage, is the value of drainage waters as a motive power. The quantity of rain falling on the land is estimated at 30 inches per annum over England generally; and deducting 18 of them as absorbed by vegetation, and evaporated again into the air, 12 inches remain, which trickle downwards through the soil, and find their way from the land by springs—to the sea by rivers. An inch of water over the surface of an acre of land weighs 100 tons; 1200 tons fall annually on every acre in the island, and thence descend to the sea. What an enormous force is here wasted, which might be made available to displace the expensive steam power employed in mills, or the far more expensive animal power employed on farms."

LIVE AND CARCASS WEIGHT OF PIGS.

I HAVE usually sold the whole of my pigs by weight alive; but this season, being unable to do so, and the question having been frequently put to me—What proportion does the carcass bear to the live weight? I have sent you the live and dead weights of those I have sold this winter, fed chiefly on carrots boiled, a small portion of barley-meal and linseed being mixed with them. I am feeding on mangold-wurtzel, (boiled,) the carrots being nearly exhausted. [A score is 20 pounds.]

LIVE AND DEAD WEIGHTS OF SOME FATTING PIGS SOLD FROM MARTIN'S FARM, 1849.

Live Weights.			Dead Weights.		Live Weights.			Dead Weights.	
Cwt.	qrs.	lbs.	Scores.	lbs.	Cwt.	qrs.	lbs.	Scores.	lbs.
1	3	15	7	11	2	1	10		
1	3	7	7	3	2	1	2	29	3
1	3	15	7	7	2	1	8		
2	1	0	8	19	2	3	10	12	9
2	0	0	8	2	2	3	2	11	18
1	3	19	7	19	1	2	25	8	10
1	3	9	7	0	2	0	2	Three 7	6
1	3	10	Four 10	10	2	2	10		
2	0	19	8	10	2	2	18	32	0
2	2	0	10	9	2	1	21		
2	1	17	9	10	2	1	14	10	10
2	0	0	8	2	2	2	13		
2	0	22	8	14	2	1	22	31	4
2	2	3	11	0	2	2	13		
2	3	1	12	1	2	0	21	Four small 7	9
2	0	7	8	17	3	0	5		
1	3	3	7	12	3	0	18	26	4
1	2	3	6	6	3	2	6	15	14
1	3	19	8	15	2	1	21		
2	1	15	11	13	2	2	18		
2	1	11	11	2	2	1	20	40	16
2	1	14	10	13	2	2	4		

M. SANDFORD.

"BOX-FEEDING" FOR CATTLE.

THERE is always something to keep up agitation in the agricultural world: indeed his mind must be naturally inclined to a stupid condition who cannot find in the round of agricultural inquiry something to keep it always awake. One of the questions now in England is to *box-feed* or not to box-feed.

BOX-FEEDING.—The evidence given in "The Agricultural Gazette," on the subject of box-feeding has been, with one or two exceptions, entirely in favour of that system; but still the statements made and reiterated by Mr. Wilkins against it are so decided and so emphatic that many persons may be led to imagine that he has good grounds for the strong assertion he makes of the practice being unhealthy, because the cattle are always wet, cold, and dirty. It occurred to me that I could very easily test this fact by putting an animal into a loose horse-box that was empty and detached from my stable, and keeping it there for a sufficient length of time. Accordingly, I had it littered down, and turned into it a milch cow. The floor of this loose box was flagged and slightly sloped towards the door. I gave orders that no dung should be removed, but fresh litter should be lightly spread over the dung as often as necessary. In this state the cow was kept for three months before the manure was removed. Now then for the result. The

floor being flagged and sloped, the urine might have been expected to percolate through the litter to a certain extent; but it did not do so, the litter soaked it all up, there was no bad smell, the cow was always clean and dry, gave an abundance of milk, and from the sleekness of her coat gave indubitable signs of good health. This experiment has completely satisfied me that a box on a dry foundation (even when sunk two feet below the surrounding ground) must not be wet, dirty, cold, or uncomfortable, and that it is a system well calculated to improve the condition of cattle by keeping them warm, dry, and clean. All that is necessary, beyond a dry box, is attention on the part of the attendant in the supply of litter; and as there is always a man kept to look after and feed cattle put up to fatten, it is no extra expense giving an extra supply of straw, as the quality and quantity of manure made by this system amply repays the value of the straw. I have not touched upon the question of compounds for feeding, as that is a separate subject.—*W. Hodgson.*

STIRRING LAND IN TIME OF DROUGHT.

MANY would think this operation in time of drought would aggravate the evil. On the contrary, the scientific and experienced Editor of "The London Agricultural Gazette" says:—

Experience has proved that stirring the soil, so as to insure a loose surface, is highly beneficial to growing crops. Air is thereby enabled to act more perfectly upon the substances from which plants derive their nourishment; and, in dry weather, the escape of moisture is prevented. In fact, loose soil acts as a mulching. Where the surface is compact, it will have been observed that the sun's rays dry the ground to a greater depth than they do where it is loose. When the particles of the soil are in close contact, the uppermost, parched by the heat of the sun, draw humidity from those immediately under them; and these again from others still lower. On the contrary, when the surface is loose and well pulverized, it may lose its moisture rapidly and become very dry; yet, from imperfect cohesion with the inferior portion, the latter cannot readily communicate its moisture. In short, the loose soil at the top becomes an interposing medium which protects the under stratum from the drying effects of the sun's rays.

It is not only in dry weather that a compact surface is prejudicial to crops, in general it proves very injurious when rain comes. All the rain which falls in most summers is fully required for the growth of crops, provided the ground is deeply drained and trenched as it ought to be. Some wet districts, of course, will form exceptions. If a great portion of the rain which falls on a given piece of ground is allowed to run off by the surface, as is too often the case when the latter is not kept loose, then the crops must suffer from the want of moisture, unless the expense of artificial watering is incurred; but even this supplied in equal quantity has not the genial quality which rain-water possesses for promoting vegetation.

Phosphate of Lime.—It is never *made:* our natural supplies are abundant in bones, which are half phosphate of lime, and in coprolites, which give from one-third to two-thirds phosphate of lime. The biphosphate is made from the phosphate by adding one-third their weight of sulphuric acid to bones, which are first well wetted, and, after the addition of the acid, suffered to lie in a heap for a week or two, and at length mixed with ashes and sown, 3 or 4 cwt. per acre, as a manure for turnips.—*English Paper.*

THE RAILROAD—PROSPECTS AHEAD.

[From the Staunton Spectator.]

The engineers have been busily at work for some weeks past, running the various lines, with a view to the location of the railroad between Waynesborough and this place. The survey of one line has been completed, and, by it, the distance between the two points is twelve miles and three-eighths, the distance by the turnpike being precisely twelve. Should this route be established, the road will pass up the meadow between the Deaf and Dumb Institution and the Lunatic Asylum, and the depot will be on the south side of Lewis's creek, near the bridge on the Middlebrook road. Other routes, which are thought by some to be more advantageous, are yet to be examined.

When we look out upon the brilliant prospect ahead of us, we confess that we become a little exhilarated. With the McAdam road entering our town from Winchester, on the north; the fine turnpike, partly McAdamized, from the Ohio river, on the west; the plank or McAdam road from Lexington, on the south; and the plank road from Scottsville, and the railroad, on the east, we must become the centre of a thrifty trade, and the most flourishing inland town in the State. When these improvements are completed, the superior water-power of our county will be brought into exercise; every streamlet and mountain-rill which now wastes its force will be made to ply a mill or factory. Then our mineral wealth will be developed, and turned to profitable account. Then the farmer will cultivate his lands with tenfold diligence, and receive a reward in proportion, and then the very stones which now cumber the ground, converted into lime and sent off to fertilize the fields of less favoured regions, will prove to us valuable as mines of gold. [And all because, virtually, the consumer is drawn closer to the producer.—*Ed. P. L. & A.*]

ARTIFICIAL GYPSUM.

At a recent meeting of the French Central Society of Agriculture, M. Moll spoke of the advantages arising from the employment of artificial gypsum in those cases in which the nature of the soil, or the crops to be obtained, indicated the application of this manure; but when the land to be manured was so situated that the natural gypsum could only be obtained at such a price as to render its employment not sufficiently remunerating. As there may be localities in England where a knowledge of the process of preparing this artificial gypsum would be of service, I send the following instructions. Take 1 cwt. of well slaked and sifted lime, and add to it 11¼ lbs. of sublimed sulphur in fine powder, and intimately mix them together. At the expiration of a few days the mixture, which was at first of a pale yellow colour, will appear white; oxygen having been absorbed, the sulphur converted into sulphuric acid, and a sulphate of lime or gypsum formed. This artificial gypsum will be found to contain a certain portion of carbonate of lime or common chalk, which has not been transformed into sulphate; but this, instead of being a disadvantage, is in reality of great benefit, as its admixture with the gypsum keeps the latter in a state of powder, and prevents its hardening. The mixture of sulphur and slaked lime must be slightly moistened, and every part by degrees exposed to the action of the air; but care must be taken not to add so much water as would make the mixture of a pasty consistence, otherwise the gypsum formed would harden, and require much labour to reduce it to the fine powder necessary for its employment as manure.—*E. H. Durden.*

NIGHT-SOIL:

NEGLECT AND WASTE OF IT IN TOWN AND COUNTRY.

PERCEIVING, as every one must have done, an increasing disposition to husband every other resource for fertilizing land, it has to us been for years a matter of surprise that *night-soil*, the richest of them all, should be so much neglected. In Holland, where the highest state of fertility and productiveness is to be seen, they sell it by the pound, and a farmer would as soon think of throwing away the money which he knows it to be worth, as to waste the substance itself. Particularly have we been surprised that no farmer in the neighbourhood of Washington—Mr. Stone, Mr. Riggs, Mr. Blair, or Mr. Rives, for instance—has made suitable provision for collecting the immense accumulations which might so easily be obtained from the great stercoraries of that city: nor is there, that we are aware of, any systematic plan for collecting and using the night-soil of Baltimore, where we happen to be writing, and other large cities.

The following, from the London "Mark Lane Express," is highly interesting and worthy of attention, not only from farmers, but from all who have in charge the government and health of our large towns. Doubtless some disinfecting agent might be found, with us, as economical and effectual as the Irish peat charcoal. Does it not present an object more *inviting* for the formation of a company in our large cities, than many other objects for which they have been gotten up? But our present purpose is merely to present and to register for future and for practical use, a most important discovery which may be turned to profitable account, by any one having some capital and a little enterprise, and at a loss for the employment of them. We do not remember to have seen on a single one of the many farms that have lately fallen under our view, any provision for the collection of the most efficient of all offals, while common sense tells every farmer that he should not lose, if he could help it, by any possible means at his command, the excrement or the feather of a goose or a pigeon. But the following is important, were it only to show how, by the use of common charcoal, so easily to be had, a very great and very common nuisance about private dwellings may be abated:—

IRISH PEAT CHARCOAL AND EXCRETORY MATTER.

On Monday night last a very unusual meeting of a highly interesting character took place at the Mechanics' Institute, Southampton Buildings. There were present an assemblage of above six hundred persons, composed of many of the leading medical and scientific characters of London, and several foreigners of distinction, who appeared to be much interested in the proceedings. Amongst those present we observed a number of the Poor-law Guardians of London and the Country; the Treasurer, Secretary, and several of the Members of the London Botanical Society; the Secretary of the King's College Hospital; Dr. Alfred King; Dr. Walker; Dr. Malan; several Members of the Sewers Commission; Professor Wildsmith; Professor Way; Captain Horne, (Life Guards;) Sir Augustus Hillary, Bart.; O'Gorman Mahon, Esq.; Dr. Bird; General McLeod; General Briggs; Colonel McDonald; Wm. Shaw, Esq., Strand; Wm. S. Langbourne, Esq.; Wm. P. Andrew, Esq.; Dr. Ayres; Dr. Graham; Dr. Lancaster; Rev. R. I. Beadon; Rev. G. H. Stoddart; Paul Shordiche, Esq.; H. A. Harrison, Esq. (Commissioner of the Board of Exchequer); the Proprietor of the *Mining Journal;* Dr. Reid; Dr. Russel; several Civil Engineers; and many others of note: in fact, we have seldom attended a meeting composed of so many scientific men.

The meeting was held in consequence of "*a challenge*" given by this paper to Mr. JASPER ROGERS, C.E., who had proposed on several occasions, by letters, &c., published therein, to solve at the same time one of the great social and pecuniary difficulties of Ireland, and the great sanitory question now agitated in the metropolis. The primary object of the meeting was to test, by actual experiment, the valuable deodorizing properties of peat charcoal, when applied to and intermixed with night-soil, the matter of sewers

&c.; and its peculiar character may be inferred from the fact that a chairman was selected hap-hazard from the body of the meeting; that eight judges were chosen, according to "Crowner's 'quest law," *de circumstantibus*, all being perfect strangers to one another, and all ultimately concurred in bearing testimony to the value and importance of the experiments which they were called upon to witness, and by which the deleterious and appalling effects, in crowded cities, of decomposed animal and vegetable matter might be averted and made subservient to the reproduction of food for man.

The proceedings were opened by an address from Mr. Wm. Shaw, who stated that he had been mainly instrumental in calling the meeting together. Having been formerly practically connected with agriculture, and latterly devoted to agricultural literature, and seeing how much had been done by their neighbours on the continent in the use of night-soil for the improvement of agriculture, his attention had been directed to that point, more especially to some means by which so valuable a manure as human excretiæ could be saved. In London it was not only entirely thrown away, but actually so disposed of as to poison and infect the air we breathed, although it was well known to be a most valuable fertilizer, but could not be dealt with on account of its offensiveness. Mr. Rogers having directed his attention to the subject of the deodorizing powers of peat charcoal, and frequently published statements in the *Mark Lane Express* upon the subject, which, *if not true*, would lead many astray, while, if true, would be productive of incalculable good to the agricultural interest as well as towns, he had *challenged Mr. Rogers to the proof*, because he felt that no doubt should be permitted to rest upon the subject. It was fact, or it was not; and a question of such paramount importance should not be permitted to exist a moment if possible to be ascertained. Although some delay had taken place, he presumed, in making preparation, Mr. Rogers had accepted the challenge, and he (Mr. Shaw) was bound to say that in doing so, Mr. R. had offered to him, unasked, the privilege of naming the time and *place*, and *judges* of the test. In accordance therewith he had appointed the present to be the "*time and place;*" and all that was necessary to *prove* or *disprove* the question was the appointment of *judges*. Now, he conceived the most straight-forward and honest way would be that the *chairman* and *judges* should be taken indiscriminately from the meeting. (Hear, hear.) "Let whoever is the centre man of the first row be chairman, (cheers,) and let the meeting send on the platform eight judges. (Hear, hear.) He begged to disclaim having private or personal interest in view—he wished the trial to be made in the most public manner, because it was a great public question; let the meeting select its own chairman, and pronounce its opinion upon the result."

At the suggestion of Mr. Shaw, a gentleman was then called from the body of the meeting to act as chairman, and from a number who presented themselves on the platform for that purpose, eight were chosen to watch the proceedings, and act as judges. One part of night-soil, and two parts of peat charcoal were then passed through a mill of simple construction, in which they were thoroughly mixed, the result being a dry blackish powder, not unlike the peat charcoal in appearance, and giving out a faint ammoniacal smell, which almost instantly passed off, leaving the poudrette inodorous and capable of being handled and carried about without any inconvenience. There was a small loss in weight, the product something more than 17 lb. for 18 lb. put into the mill; but the remainder appeared to be the quantity resting in the mill.

The operation having been repeated, the same results followed, and within a few minutes the whole quantity intermixed was carried off by the

audience, who came forward from all parts of the theatre to take it in *handfuls*. This fact was striking; a few minutes before, all *noses* were turned away from the tin buckets in which the night-soil was brought, (closely covered up;) a few minutes after, it was taken up in *handfuls*, put into slight paper bags, which Mr. Rogers had provided, (of course knowing the result to be attained,) which were carried off, "stowed away" possibly in the same pocket with the pocket-handkerchief, but which in fact could not be affected by it. The *material* was an object of such great demand that it was at length carefully collected from the floor, and *pocketed*.

Each bag exhibited the following amusing announcement, printed on either side:—

IRISH PEAT CHARCOAL

AND

ENGLISH EXCRETIÆ,

Intermixed in the presence of the Meeting at the

MECHANICS' INSTITUTE, LONDON,

Held on the 1st October, 1849;

ACCORDING TO THE PATENTS OF

MR. JASPER W. ROGERS. C.E.,

IN ANSWER TO

THE CHALLENGE OF

"THE MARK-LANE EXPRESS."

"NON OLET."

COMPONENTS OF IRISH PEAT CHARCOAL AND ENGLISH EXCRETIÆ.

PEAT CHARCOAL.	EXCRETIÆ.
Carbon,	Phosphate of Ammonia,
Hydrogen,	Phosphate of Lime,
Nitrogen,	Phosphate of Magnesia
Oxygen,	Phosphate of Soda,
Sand and Clay,	Phosphate of Iron,
Oxide of Iron,	Chloride of Sodium and Alkaline Sulphate,
Phosphoric Acid,	Sulphate of Lime,
Silicate of Potash,	Sulphate of Soda,
Chloride of Sodium,	Sulphate of Potassa,
Carbonate of Lime,	Hydrochlorate of Ammonia,
Sulphate of Lime, &c.	Lactate of Ammonia,
	Free Lactic Acid,
	Urea,
Possessing as a whole, the power of absorbing, deodorizing, and retaining for the uses of vegetation, the components of Human Excretiæ.	Uric Acid,
	Animal Matter,
	Mucus,
	Earthy Phosphates, &c.

Vide:

BERZILIUS,
BOUSINGAULT,
LIEBIG,
LYON PLAYFAIR,
CUTHBERT JOHNSON, &c.

"UNITY IS STRENGTH."

The CHAIRMAN, after the experiments had concluded, called upon the judges to give their opinions *seriatim*, for the satisfaction of the meeting.

Dr. ALFRED KING said the results of the process appeared to him extremely satisfactory. The product had at first a slight ammoniacal smell, and no doubt some ammonia and other gases were given off. It had completely answered the object in view, and for his part he had been very much surprised and pleased at the result, and was of opinion that a most glorious discovery had been made. He was also highly impressed with the honest and straightforward conduct of Mr. Rogers in submitting the process to the investigation of perfect strangers. He had come forward as a judge with a very skeptical feeling; but that had been completely changed, and he had no doubt on his mind that the advantage to the public would be equal to the merit of the discovery. He again repeated, Mr. Rogers had won general good feeling by the straightforward course he had pursued. (Hear, hear.)

Mr. LYON, Secretary to the King's College Hospital, the second judge, said he also was of opinion that the experiment had been perfectly successful. It was the intention of Dr. Guy to have been present, but in consequence of the opening of the session he was unable to attend. He was glad to find that there had been no chairman provided beforehand, and no packed committee. He knew nothing of any of the parties, and had offered himself as a judge from the belief that, as acting in an official capacity, his testimony would be some guarantee of the fairness and impartiality of the experiments, to which he bore the strongest testimony.

Mr. GRIFFITHS, surgeon, of No. 1 Bloomsbury-place, had great pleasure in joining in the approval of his fellow-judges. He thought the application of charcoal to cesspools would be a very important benefit, as he had witnessed in the course of his house-to-house visitation many cases in which the removal of the night-soil was likely to be productive of more evil and danger than allowing it to remain. By mixing the charcoal with it all danger would be obviated, and he trusted the matter would be taken up by public bodies in the metropolis. In his numerous official visits to cases of cholera in the metropolis, with scarcely an exception, he had traced the disease as emanating from some of the filthy exhalations which were allowed to pollute the air.

Mr. J. E. YARROW, civil engineer, of 18 Adam street, and Cheshire, said he attended there as the representative of a large body of agriculturists of the county of Cheshire, who had requested him to investigate and report upon the various deodorizing agents now being put forward in the metropolis; and he expressed himself perfectly satisfied with the result. As a practical man, he believed that the charcoal might be applied with the greatest benefit to the towns in which large quantities of night-soil were collected; and he should be fully prepared, after what he had witnessed, to give the principle which Mr. Rogers has so fully established his best support. (Hear.)

Mr. NISBETT, the next judge who came forward, said he was only an accountant, and could not be supposed to know much of the nature of the experiments. He had been requested by his brother, Dr. Nisbett, superintendent and manager of the county lunatic asylum of Nottinghamshire, to accompany him to the meeting, his brother having been deputed by the magistrates of that county to report upon the plan. He took a handful of the *charcoal* out of the bucket, and also a handful of the *mixture;* he put each into a small paper bag, and on smelling both he could not perceive any difference. He did not feel himself competent to say whether the granulate particles were charcoal, but he could not perceive any difference between it and that which came from the machine. If the pecuniary part

of the process were found to answer as well as the chemical, Mr. Rogers would have conferred a very great boon upon society. (Hear, hear.)

Dr. WALKER, M.A., of Maidstone College, said the result had entirely answered his expectations; and, indeed, gone beyond them. It was true there was a slight smell of ammonia, but it appeared to go off very soon. He had attended more with an agricultural view than any other, in order to ascertain whether it would come within the range of farmers, so as to be made available by them without any considerable expense or costly machinery. If that were so, it would be of very great value, especially in the county of Kent, where the most expensive manures were employed.

Mr. SWINBURNE, a barrister, said he would premise that he was averse to the principle, having a plan of his own; but did not hesitate to say that, as a deodorizer, the charcoal was perfectly efficacious. He had tested the matter privately, and was satisfied that it was one of the most complete deodorizers they possessed. He should probably have the honour of submitting an antagonistic plan, and therefore his testimony must be considered the more impartial.

Mr. GARRETT, one of the commissioners of the parish of St. James, and one of the committee of the sanitary board, entirely agreed with the gentlemen who had preceded him. He thought it would be most desirable if the charcoal could be introduced into cesspools in the metropolis. He was not so favourable to machines, as they could not be so generally adopted; but the fact of deodorization could not be doubted. (Hear.)

Mr. NISBETT, an analytical chemist, was the last of the judges. He said it was known to chemists for a long period that charcoal was a powerful deodorizer; but much credit was due to Mr. Rogers for bringing the fact in a practical way before the public. As an agricultural chemist, he was very much interested in the subject; and in the present case he thought the result was highly satisfactory. If the pecuniary calculations were such as would enable the process to be carried on with advantage, the peat charcoal of the bogs of Ireland was likely to produce very valuable and important benefits in the heart of the metropolis.

The CHAIRMAN, in addressing the meeting, said: "You have now heard the opinions of the judges appointed, in which I most cordially agree. I was myself doubtful, but I am no longer so; and I must say I consider Mr. Shaw has been beaten in the battle (No, no,)—that is, I mean that Mr. Rogers has established his point." (Hear.)

Mr. SHAW was loudly called for, and said he would not presume to offer any opinion after the very able and satisfactory ones the meeting had heard. He was gratified to find that his challenge had been productive of such satisfactory results. He only trusted that Mr. Rogers's calculations might be borne out practically; and then, indeed, they would be enabled to say that they had achieved a great victory. He was very happy that he had *been beaten;* for he was satisfied that the value of a manure so composed as that presented could not be too highly estimated. He believed few things could effect greater benefit than such a manure.

Mr. ROGERS was then called for, and on presenting himself was received with loud cheers, which lasted for some minutes. He thanked the meeting sincerely for the approbation bestowed, but under existing circumstances would not trespass on their time more than to say a few words. As regards cost of the material, peat charcoal may be had from the bogs of Ireland, and will be sold in London by the Irish Amelioration Society, at all events, at £2 10*s.* a ton, giving fair, nay handsome, profits to the proprietors; and he was happy to say he could vouch for all parties connected with that society, that it was their anxious wish to reduce the cost as much as possible, in

order that it might be used to do away with the evils of the *horrid* sewers and cesspools of all large cities, and employ the people of Ireland. But what were cesspools compared to sewers! The former was the better of the two. Cesspools were, perhaps, 10, 15, or 20 feet deep, with a surface of only 3 or four feet square. The atmosphere acted only on the upper surface, whilst if that mass of 20 feet in depth were driven into a sewer, and from thence through miles of sewers, it would contaminate miles and miles of the city, giving out its pestilence to every place around as it went along, in place of yielding its evil at one spot alone. The noxious gases given out from cesspools were at least one thousand fold *less* than when the matter was driven into sewers. He had no hesitation in saying that so long as the present system continued of sending excretory matter into the sewers, thus diffusing deleterious vapours from street to street throughout the town, London would never be free from disease. (Hear, hear.) He was happy to say that if, in place of attempting to remove the contents of cesspools during warm weather, the surface was covered with 2 or 3 inches of peat charcoal, he could vouch that no odour could arise. This was not a theory. Above a year since he had been asked to try the experiment on a cesspool belonging to an eminent firm in Gray's Inn, not a thousand yards from where he stood. On examination he found it was so offensive that the windows of the back offices could not be kept open at times. He made the experiment, covered the surface with two or three inches in depth of charcoal, the result being that within a quarter of an hour all odour had subsided. The *cause* of the fact was immediately after debated by the parties present, and one of the firm alluded to, ***who stood over the openings of the privy for at least half an hour!*** thus proving that no odour whatever existed. This occurred last year, and about a month since he was informed it was still unchanged. (Hear.) Mr. Rogers having answered several questions relating to the fertilizing properties of *animalized charcoal*, concluded by offering his thanks to the meeting and to Mr. Shaw, for the fair and upright manner in which the tests had been made; and to the chairman and judges, to whom he was a stranger, for the highly proper and honourable course they had adopted in thoroughly investigating facts which interested every member of the community. Mr. Rogers retired amidst much applause. When thanks had been voted to the chairman and judges, the meeting was formally dissolved; but a very interesting discussion afterwards arose upon the subject of the plans proposed by Mr. Rogers for effecting "sanitary reform" in London through means of peat charcoal; and a wish was generally expressed that he should hold another meeting, for the purpose of making the public aware of his plans for that purpose and the presumed results.

For giving so much space to a subject, certainly not attractive *per se*, we hope to provoke attention, not only from farmers, but from the curators of the public health in large cities, where the circulation of this journal is extending, among those of all classes who desire to spread the conviction that between the man at the plough and those at the jack-plane and the trowel there is an agreement, instead of a diversity of interests; and that therefore, in place of a mean, despicable spirit of jealousy and ill-will, there should always prevail a feeling of harmony and benevolence. The conviction is rapidly spreading that the nearer the farmer and the manufacturer and mechanic work together, the cheaper and the more extensive will be the exchanges of the products of each other's labour.

But the question will arise whether some cheaper substance than charcoal may not be employed as a disinfector. The reader will observe, however, that the charcoal here recommended is that of a cheap material, *peat*. Does not that material abound in many other parts of our country besides Massachusetts and New York, where they do employ it as fuel, and as an element of compound manure? We wish the inquiry 'To what extent?' could be embraced in the forthcoming census. But the subjects to be included in that, have been so much cut down by Congressional injunction, that the very efficient

Secretary of the Board, Mr. Kennedy, under whose supervision the next is to be arranged, will be much restricted in the exercise of his enlarged and liberal conception of what is needed to a full development of the products and capabilities of the country.

As to the most eligible substance to be employed in the preparation of night-soil for use as a manure, and one of the most efficient to be had, it is obviously proper in the first instance to guard against the use of such deodorizers as would counteract its well-known fertilizing powers: and what recommends charcoal, is the fact that it is known to be a manure of itself, acting as such, according to Professor Lindley, by first absorbing moisture, carbonic acid, and ammonia, from the atmosphere, and then yielding them to the plants which it surrounds. We ourselves first witnessed its powerful effects in the garden of Dr. Heiskell, at his residence in the Demenou building, at Washington.

The absorbing power of charcoal varies according to the texture of the wood from which it is made—the denser the wood the greater being the absorbent power of the coal.

The following estimate, says Dr. Lindley, of the quantities of various gases absorbed in twenty-four hours, by charcoal of boxwood, as given by De Saussure, will be found near enough to the truth to assist judgment for all practical purposes:—

	Volume.		Volume.
Hydrogen	1·75	Nitrous oxide	40
Nitrogen	7·5	Sulphuretted hydrogen	55
Oxygen	9·25	Sulphurous acid	65
Carbonic oxide	9·42	Muriatic acid	85
Olefiant gas	35	Ammoniacal gas	90
Carbonic acid	35		

It will be seen, at a glance, from this table, that a body capable of absorbing such large quantities of carbonic acid, sulphuric, hydrogen, olefiant, and ammoniacal gases, must be a powerful deodorizer.

COTTON MANUFACTURE IN CONNECTICUT.

From a report, published by order of the General Assembly of Connecticut, under an act "to obtain statistical information in relation to certain branches of industry," we extract the following useful information, the same being the returns made for that State for the year ending October 1, 1845:—

Number of cotton mills	137
" " spindles	199,945
Pounds " consumed	13,319,170
Yards " cloth manufactured	33,431,935
Value " " "	$2,585,788
Pounds " yarn "	1,872,883
Value " " "	$357,993
Dozen spool " thread "	70,000
Value " " "	$18,500
Pounds " batting "	608,547
Value " " "	$40,603
Dozen sheets pelisse wadding	30,000
Value " " "	$8,400
Yards of cotton flannel "	47,817
Value " " "	$12,042
Capital invested in the manufacture of cotton	$3,312,450
Number of males employed	2,312
" females "	3,050
" calico factories	1
Yards " printed	2,000,000
Value " "	$175,000

What we in particular would invite the attention of our readers to in the foregoing table, is the quantity of cotton consumed in that State, and the value of goods manufactured from the same. It will be noticed, that while 13,319,170 pounds of cotton were manufactured, the value of three manufactured articles, cloth, yarn, and batting, was $2,984,384. We have not the means of giving the actual cost of the raw cotton to the

manufacturer, at his mill, during the year in question, but will call it, on an average, ten cents per pound. This will make the cost of the raw material given above, $1,331,917. Deduct this sum from the value of the manufactured article, and we have remaining, $1,652,467, to defray the expense of manufacturing and for profits. This latter sum goes to the operative, the mechanic, the merchant, and the farmer, and by its circulation helps to put in motion the whole machinery of human industry. Its influence is felt in every department of labour, and in every grade of society.

Is it strange, then, that these comparatively old manufacturing States have grown rich and prosperous? Let the West and South mark the causes of state and national prosperity, and profit by the instruction thus afforded.—*Cannellton Economist.*

Can any one say how much of the above sums goes back into the pockets of landholders, for first the cotton, then the flour, meat, milk, butter, cheese; and suppose the operatives and their employers made ten dollars where they make one—would it not make them so much the better *customers* for the farmer and the planter? Is it not obvious that for their interest, the nearer the shuttle and the anvil, the pick-axe and the trowel are to the plough, and the *more flush of money* those who work at them are, the better for the agriculturist? So much so as that they could afford, if required, (which they are not,) to pay a little more for their iron and cloth and cotton goods, and roads and houses? But wait a little—"a better time is coming!" The people are coming to their senses, and beginning to see that they can get along without being ridden by demagogues "booted and spurred." They are beginning to see that protection to American industry is not properly a *party* question, and that they may be true to their party without being in favour of encouragement to foreign labourers in a contest with our own people. If of these two facts they need any better proof, even good democrats, who are contending for what they believe to be best, will find that proof to their satisfaction, we would think, in the following letter from GENERAL JACKSON, who was, we apprehend, good enough democrat for all American ends and purposes:—

"Where," says General Jackson in his letter to Dr. Coleman, in 1824, when wheat was selling for $1·14, "has the American farmer a market for his surplus product? Except for cotton, he has neither a foreign nor a home market. Does not this clearly prove, where there is neither a market at home nor abroad, that there is too much labour employed in agriculture, and that the channels for labour should be multiplied? Common sense points out at once the remedy.—Draw from agriculture this superabundant labour, employ it in mechanism and manufactures, thereby creating a home market for your breadstuffs, and distributing labour to the most profitable account, and benefits to the country will result. Take from agriculture in the United States, six hundred thousand men, women, and children, and you will at once give a home market for more breadstuffs than all Europe now furnishes. In short, sir, we have been too long subject to the *policy of the British merchants.* It is high time that we should become a little more *Americanized;* and instead of feeding the paupers and labourers of England, feed our own; or else, in a short time, by continuing our present policy, we shall all be rendered paupers ourselves."

Tobacco for France.—The French consulate in New York gives notice that proposals for supplying the national manufactories of tobacco will be decided on, at the Ministry of Finance in Paris, on the 20th December next, at one o'clock P. M., for the quantities following:—

One million and eight hundred thousand kilogrammes of Virginia leaf tobacco, of the crop of 1849, according to four samples.

One million and nine hundred thousand kilogrammes of Maryland leaf tobacco, crop of 1849, according to four samples.

Two millions and two hundred and forty thousand kilogrammes of Kentucky leaf, crop of 1849, according to four samples.

And two hundred thousand kilogrammes of Havana leaf, crop of 1849, according to two samples.

SIMPLE REMEDY FOR "HOVEN" IN CATTLE.

CATTLE are very liable to become "hoven," or suddenly blown, on being suddenly turned in to eat "their fill" in damp rich pastures, especially of clover. So rapid and fatal are these attacks that there is no chance of saving the animal but by the immediate administration of some effectual remedy.

The remedy most commonly used is the introduction of the "choke pipe," or œsophagus-tube into the stomach. Sometimes resort is had to "paunching," or stabbing with an ordinary knife in the left side, about a hand's breadth from the hip and equidistant from the loins, which affords instant relief, but both these are more or less critical and dangerous remedies in the hands of ordinary farmers; and, besides, a quantity of the contents of the stomach is apt to escape into the abdominal cavity, remaining there as a source of irritation and disorder for a long time. We remember to have seen two valuable young cattle so saved many years since, by the late eminent and much lamented doctor, John Owen of Baltimore; but their health was for a long time impaired, and their growth checked by the operation.

A veterinary surgeon, in the last number of an English journal of very high authority, states what may be useful, sooner or later, to every practical farmer, and hence we are induced to transfer it to the pages of "The Plough, the Loom, and the Anvil." He says:—

I have long looked for an agent which could be used with perfect safety by the agriculturists, and at the same time be one of the most likely means of cure, or, at least which would give such relief as would afford time for other assistance to arrive, if necessary. Common hog's lard is an article which can be procured at every farmhouse, and I can speak very highly of its good effects when given in cases of hoven; I have advised the use of it to my friends for the last twenty years, and every succeeding year increases the favourable opinion I entertain of it. I have no hesitation in saying, that if it be given at once when the animal is perceived to be swelled or hoven (in the manner I shall hereafter point out) that relief will be very speedily obtained; but if the giving of it be delayed, more powerful agents may be required; but nineteen out of twenty of the common cases of hoven will be relieved by it, and no after-treatment required; and it has this advantage, that the dose may be repeated with safety. To a feeling mind nothing can be more annoying than to be called to a case, and find the animal dead or past recovery, and to know that in all human probability the animal would have been alive under simple remedial means.

If I do not take up too much of your valuable space, I will relate the two following cases, which I think and hope will convince your readers of the efficacy of the plan I propose; and I trust it will not be put aside from its simplicity, as that is the very point I have studied to attain.

Some time since I was sent for by Mrs. Hunt of Harlington, with a message that her cows had got into the clover, and that one of them was hoven. Before I could get there, or she could be got home to the yard, she dropped on the road and died. Two others I found blown up immensely in the yard. I told Mrs. Hunt that though I had plenty of other remedies with me, yet I should wish her to manage these two herself, and I would show her how; and then she would know another time what to do herself, and what to tell her neighbours to do in the same difficulty. I then desired her to get me about a pound and a half of lard, and a three-pint or two-quart jug, and to put the lard into the jug, and fill it up with hot water; and when it was melted, and cool enough, I ordered the men to give half of it, out of a horn or bottle to each cow, and then to hold the cow's head out straight, while I pressed moderately heavy on the left side of the body, where the stomach blows up most. About a quarter of an hour or twenty minutes afterwards they were able to walk about, and nearly all the gas had subsided, partly by

escape up the throat, and the other by the action of the lard on the coats of the stomach. As they were going on comfortably, I left them, and they did very well.

The next case is one that I think will carry with it a very strong evidence of the value of this plan of relief. About a month back the cowman at Mrs. Gostling's, Whitton Place, came in a very great hurry, and told me he had got several of his cows hove, and wished me to see them as soon as possible. He said they had only been out two hours into a fresh piece of grass that had been shut up a fortnight. As soon as he perceived it, he came away for me; and while he and my man were putting a horse into a gig, I put into it what medicines were necessary, and a flexible tube, and was not more than two minutes in starting; and although I had less than a mile to drive to the cows, when we got there three of them were quite dead, and five more blown up so that they would not move, and they required earnest persuasion with the whip to keep them on their legs. I ordered them to be moved as well as they could into the cow-yard close by; and then determined, in this desperate case, to use my remedy. I therefore sent the butler into the kitchen to get about a pound and a half or two pounds of lard, and to put it into a three-quart jug, with two quarts of hot water, and to bring it to me moderately hot. While he was gone, I gave one of the worst cases some castor and linseed oil, with the cajeput oil and spir. ether. nitr., and left one of the worst cases for the lard, and also one not quite so bad as the first for the same; to the other next worst I gave the oil, and to the fifth I gave the lard. As soon as I had given them their doses, I had their heads held out straight, and their stomachs well pressed down for some time, by two men spreading their hands out wide over the highest part, towards the hip, till we found the wind break off up the throat, which is much facilitated by letting an assistant, while the head is held out straight, lay hold of the tongue, and give it a good pull now and then—not a violent one, but sufficient to make the cow try to get it away; and then let it go again, and it will generally be found that the wind will force its way up to the throat directly afterwards. The quantity of lard I gave to each was about a pound, and in half-an-hour, or three-quarters at the furthest, they were all out of danger, and would have eaten food if I had allowed them. Those that had the oil were the quickest relieved. Although I had the flexible tube with me, I did not use it, deeming it necessary in a fair trial to do without it.

I am quite sure you will feel as happy as I shall, if the insertion of the above in your valuable magazine should prove the means of saving animal life; and I am quite sure I shall have the thanks of every veterinary surgeon in practice among the cattle districts, as nothing is more painful to both the medical attendant and the owner than their meeting together after the animal has died, which often happens when every possible exertion has been made to arrive in time to relieve them.

I have no doubt the same plan, if adopted in time with sheep, when blown on clover, would relieve them immediately.

I remain, sir, your obedient, humble servant,

PETER BOUGHTON,
Veterinary Surgeon.

Hounslow, September 22.

Wheat.—"Thirty-seven stalks from one seed," says the editor of The London Agricultural Gazette, "are not an extraordinary occurrence, where plenty of room is given for the plant on a rich soil."

TOO MUCH LAND AND TOO LITTLE CAPITAL.

THAT this is the condition of the agriculturist in the old States, generally, and more especially where, under the cry of "free trade," the consumer has not been drawn near to the producer, there is, we believe, no longer any doubt. For a long time, the minds of the agricultural community lay waste, as well as their lands; deterioration and ignorance, or indifference to the means of improvement, went on together, until some forty years ago, such men as Lowell, and Pickering, and Parsons of Massachusetts—the Livingstons, Stevens, Mitchell, L'Hommedieu, Van Rensellaer, and many others in New York—Peters, and Lorain, and Worth and others in Pennsylvania—Cooper, in New Jersey; Bordley, in Maryland—Taylor (Arator), Minor, Jefferson, T. Mann Randolph, Madison, Garnett and others in Virginia—and the Pinkneys, and Hamptons, and Singletons, and other bright names and bright minds in South Carolina, began to rouse the public attention to the fact, that for its resuscitation and improvement means might be found; but that, for its own security and honour, it was to be done by *intellectual inquiry and the application of science.*

The sparks of inquiry which they supplied, and were trying, with patriotic enthusiasm, to blow into a flame, were very slowly kindling—sometimes almost expiring, and again breaking forth with fitful blaze, here and there—when it occurred to the Editor of this journal, that what was necessary was to *lay a train that should extend from one fire to another*—to offer a common medium of communication, that should accelerate the *spread of the flame;* in a word, and without a metaphor, to establish an *agricultural journal,* through which the friends of the cause, throughout the country, might communicate their experience, and make inquiries of each other, and thus diffuse, over the whole country, the knowledge and the zeal which existed only in spots, here and there. Hence the establishment of the old *American Farmer,* published at his individual cost, without a single patron, or waiting for assurance of any support, but, on the contrary, against the persuasion of a few friends who wished well to the enterprise, but doubted its success, knowing how little there was of *esprit du corps,* or professional spirit and pride, among farmers. So were Fitch, and Ruemsey, and Gray, inventors of steamboats and railroads, laughed at and left to starve.

Well, what is the state of things now? Why, now we find the agricultural community generally well enough informed as to the means and the processes for improvement! *Now,* they know generally, and well enough the value of lime, and draining, and guano, and plaster of Paris, in behalf of which last, Judge Peters was compelled to write essay upon essay, detailing experiment on experiment, before they ceased to laugh at *it* as a humbug, and at *him* as a *book farmer!* Now, they know well enough the value of labour-saving implements, however low their estimate, if we may judge by *the premiums* they offer; *but,* now that they know all this, in what condition do the owners of these immense tracts of worn-out land in these old States, *where all are agriculturists,* find themselves? Why, with hundreds and thousands of acres of exhausted lands—houses and gardens, and orchards and fences, in a state of dilapidation, with full knowledge themselves of the means of recuperation, and with industry enough to put those means into efficient execution, but *without a dollar of capital.* In this state of things, what occurs to them? Why to sell a part of their lands, and with the proceeds improve the rest. This discovery is easily made—it lies on the surface of inquiry. But then the question arises, *who is to buy?* Why, says he, I will offer my spare land to the man at the

north, where population is dense and the land high—where the hive is full and the bees are swarming. But, say these bees, instinctively — for the instinct of bees is wonderful—have you any honey near your fields?—where are the flowers from which we are to gather it? You know a good plough from a bad one—you know the value of manure, and the value of diligence in the use of both, as well as we do—How, then, are we to live where you are starving? We are prospering in the North, and we could get from $50 to $100, and even $200 an acre, for land no better than you would sell us for $12. But, ☞ Where are your customers? What is your expense of transportation? Have you got the loom and the anvil near to the plough and the harrow? Are your *consumers* prosperous in their condition, and in numbers large in proportion to your producers, and close to them to ensure ready demand and cheap transportation? for these are the circumstances under which our lands have improved in production and in value. We go for protecting the coal miner, and the ironmonger, and the woollen manufacturer, and the shoemaker, and the tailor, against their pauper competitors in Europe, where labour is down-trodden and starved; because, even if we did pay them, *at first*, a little more for the products of their labour, these products consist almost entirely in what *they buy of us*, and, being near to us, buy with so little deduction for the cost of transportation! If, then, you want us to come and buy your old worn-out lands, or your rich lands, you must cease to cry "*free trade*—free trade." You must agree to let us draw the consumer close to us. You must now, as Mr. Jefferson said, in 1816, "*place the manufacturer by the side of the agriculturist.*" If you will not do that, how can any man prosper, even if you *give him the land* sixty, or fifty, or forty, or even twenty miles from navigation and market? What has saved all Maryland and lower Virginia from devastation and abandonment but the *virtual proximity* to their consumers, consisting in cheap transportation—four or five cents per bushel on two hundred miles of natural tide-water communication?

No! No! my friends, say the northern and eastern men—the men of Massachusetts for instance — we all went dead against your tariff of '24, for example, even our great leader, "Black Dan," voted against it; but we made a virtue of necessity, and now, instead of twenty consumers to one hundred producers, *nous avons changé tout cela!* we have changed all that—we have more of the former than of the latter, and he that can produce even a quart of blackberries can find a market for them, within the smoke of his chimney. You say no! let us sell where we can sell for most, though it be to John Bull; and buy where we can buy cheapest, though it be of Swedish or British iron, to lay down the railroads that run through our own coal and iron mines, in our own mountains! Yea verily, says the man at the North, and you see where it has left you, at the end of seventy years; that we have been, as General Jackson said, in 1824, "too long subject to the policy of British merchants!" Truly, as he further said, "*it is time that we were a little more Americanized.*"

Agree then, says the friend of *protection to American labour*, to become so Americanized, according to his recommendation, and we will agree then to come and buy your lands, and then you will have, from the sale of a part, the capital to improve the residue; and the half will yield you more than the whole does now; and we will have, for what we make on the part we buy, a market near the land for the products of the land; for it is that which has given value to the lands of the manufacturing States, until, in any direction three miles from the Boston market-house land is worth $1000 per acre. This policy, and this only, will give value to the naturally much more valuable lands of Maryland, Virginia, and the Carolinas.

As for the much-talked of improvements of Virginia lands in Fairfax county, by northern settlers, we have long apprehended, and now more than suspect, there is in all that much more of romance than of reality. On this we shall have more to say, after a late opportunity of, it is true, rather limited observation in person. But for every effect there must be an adequate cause; and as soon as such cause comes into existence, the effect *must follow*. The cause of deterioration of agriculture in the old States, is *not* want of industry or of knowledge. The agriculture along the tide-waters of the eastern shore of Maryland, some of which we have lately had the pleasure to see, is neater and better executed, and the principles of good husbandry are as well understood, if not generally better, than in the New England States. This may be denied. It is easy to deny and to denounce any thing; but it is not always so easy to prove the untruth of what we deny. If we have recommended, and still earnestly recommend, the young farmer of the Southern States to make a tour of New England, it is not that he can learn there more of the *principles* of his profession—of the value of good machinery, and the beauty of neat culture; but that he may see how inseparable is the improvement and the high price of land, and the cultivation of a thousand things, (neglected resources of the "free trade" States,) where there is that *density of population* which is the sure fruit of diversification of pursuits—which is itself, again, the sure fruit of protection to home industry, and the encouragement of the home market; where, in a word, there is that density of population which, by increasing demand, leads to the improvement of the land, and forces the food to come out of it, making there a pound of milk worth as much as a pound of butter, where population is sparse,—as it must ever be in "free trade" States and countries.

Let the common notion be what it may, the best specimens of thorough culture are to be found on large plantations in the South, where intelligent and watchful and absolute authority ensures to large forces the exact results of military precision. In fact, nothing short of untiring energy and the most skilful application of their means could keep their chins above water, while they continue to send their cotton to the looms of Europe, instead of compelling the looms and the capital to come to the cotton, making their market nearer the land, for the products of the land, and substituting the greater steadiness of the home, for the ever-fluctuating foreign market, which rises and falls according to influences over which we have no control.

We may not unaptly close these remarks with a quotation from an able and impartial work, by a British subject, just before our Revolution, on the "soil, climate, productions and agriculture of the British Colonies in North America and the West Indies." He and General Jackson seem to have thought alike—the one thinking for the interests of the Mother, the other for the Daughter:—

"This," says the writer referred to, "is a material point. It is a very *good thing for Great Britain* that the [northern] colonies which have not staples do not increase so quick, for if they did, their manufactures, &c., would increase proportionably; but that increase in the southern colonies brings on an increase of the staple products, and also a proportionable *consumption of British manufactures*. The *independency* of the colonies, whenever it may happen, must turn on this point; the increase of people in those settlements which have no staples. The increase in those which have staples must always be for the advantage of the mother country. This is the true description of a colony founded on just principles, and the *great object to be attended to is*, the people's *employing themselves in a business* wherein they *cannot interefere with Britain*." The reader will remember that this is a British writer pleading for British interests. Truly may we say again, with General Jackson, "*we have been too long* subject to the policy of British merchants. It is time we were becoming a little more Americanized."

WHAT WILL ALWAYS HAPPEN TO A PEOPLE

WHO CONTENT THEMSELVES WITH STANDING STILL AND CRYING "FREE TRADE!—GIVE US FREE TRADE!"

THERE were so many errors committed in the publication of our article on "The Resources of North Carolina," in "The Agricultural Gazette" of November, that we have sent it again to the printer, with some addition, making it like her N. B., the *most important part* of a lady's letter. Here we have roughly sketched the reflections arising on a hasty comparison of the progress of North Carolina and Massachusetts, prompting the inquiry as to the former—what disastrous influence is it that has suddenly checked the growth of this noble confederate of the republic? Of expanded surface, various but almost everywhere delightful in her climate, and in all times distinguished for hospitality and patriotism; among, if not *the* first, to declare herself in favour of independence and self-government; how is it that, during the last decennial period, she should have halted, like a noble steed suddenly "let down" in the race?

Comparisons are *odorous*, as Dogberry says in the play,—but for purposes of politico-economical inquiry they are often useful. Let us then compare the old *North* with the old *Bay* State. In *geo*graphy, she spreads over an area three times as large. In *topo*graphy, there is a striking resemblance; according to Darby, "mountainous in the west, hilly in the central, and low and sandy in the eastern sections." In 1790, North Carolina began with a population of 393,371. Massachusetts with 378,717. From that time to 1830, for forty years, North Carolina continued to widen the gap, coming out by the census of 1830, with a population of 737,987, while the old Bay State was short of her by 127,579—her population being then but 610,408. But how was it in 1840? say in fourteen years after Mr. Jefferson said it was "time to place the manufacturer by the side of her agriculturist?" The policy of protection being established by the votes of the South, Massachusetts wisely determined, as it was forced upon her,* to *make the most of it;* and began, accordingly, to draw the loom and the anvil close around the plough and the harrow. Though she had not the great materials of coal, iron, leather, or cotton, or wool, or corn, or beef, she set to work to build factories; and now she makes shoes and ploughs, and spades, and screws, and jack-planes, and pails, and piggins, and brooms, and broom-handles, and combs, and almanacs—in short, what does she not make for the people of the good old North State, except turpentine and corn; and what is the result? Why, at the last census she had nearly closed the gap between them, and instead of being 127,987 behind her, in population, she had reduced the excess over her to 15,720; and will pass the poll ahead of her in 1850. And then, will her sons, who refuse to read "The Plough, the Loom, and the Anvil," because we point out these things, more in sorrow than reproach, still shout for "free trade?"

Very well, we know the advantage enjoyed by Massachusetts in her seaports; but why did that advantage never tell, until she determined to seize the benefits held out, even by a precarious system of protection, instead of standing like a mulish child, biting her thumb, and crying for *free trade?* And has not North Carolina always enjoyed the *freedom* of being compelled to send away her corn to be eaten, and her cotton to be worn, and her tobacco to be smoked in old England and New England; bringing back half

* Against the unanimous vote of her delegation, Mr. Webster included, in 1824.

their value in hoes and ploughs, and shoes, and blankets, and cloths, and molasses, and onions? while her sons and her grandsons pride themselves on all holding on exclusively upon the plough, the field-pea, and the pine tree. Has she not had "free trade" with a vengeance?

Now let us see again the effect of diversifying employments, and of bringing the consumer to take his place by the side of the producer. Here we behold these two States maintaining their relative position in the race for forty years; Massachusetts rather giving back, her people being, even as late as 1820, employed in large proportion in agriculture, compared with their employments in other pursuits. Previous to that time, when the old North State was not only holding her own, but rather opening daylight between them, the sons of Massachusetts, in want of custom for the products of the plough, were swarming off to look for wild honey in the West. They thought the hive was crowded. Thus we see, that in 1820, she had employed at the plough and the spade, 63,460; and at the loom and the anvil, only 33,464. Then she stood 127,000 behind North Carolina in population, *but* ☞ when she changed her system, and determined to *diversify employments*,—to bring the consumer near to the producer, that she might lessen the cost of transportation and exchange, and return to the land (the great machine of production) the refuse of its products; see how, like magic, a change comes over her dream! At the time to which we have referred, the proportion employed in North Carolina was, in agriculture, 174,1[illegible]6, manufactures, 11,844. Well, now the bugle sounds for another heat—the judges take their stand, and how do these gallant sisters come out at the close of it in 1840? Massachusetts now only 15,720 behind; her population had shot up from 610,408 in 1830, to 737,699 in 1840; having increased in only ten years 127,291; while North Carolina, in the same period, had increased only 15,433; having gone from 737,987 up to 753,419. But see again how differently the two people had been employed. Massachusetts had nearly trebled her manufacturers, thereby placing the consumer within reach of the producer. As between these two classes and the products of their industry, it was—*here's one and there's the other*, and *her lands more than double in value.* While North Carolina had in the mean time *increased* her *proportion of agriculturists* to manufacturers; those employed in agriculture being in 1840, 217,095; in manufactures, *only* 14,322; or *one* at the loom and the anvil for *fifteen* at the plough; *one* consumer for *fifteen* producers! Massachusetts an *equal number of both.* Does not this show how indispensable to the growth and prosperity of States is *diversity of occupation?* and how diversity of occupation leads to increase of population, and how increase of population leads to the establishment of schools, to the laying down of railroads, and the creation of wealth by the power of steam, which again *virtually* doubles and redoubles population a thousand times in as far as augmenting the products of industry is concerned; increasing the value of land in proportion, until now, land at any point, on any road three miles from the Boston market-house, commands $1000 an acre! Well, it is for telling and demonstrating these truths, for the benefit, not of the loom and the anvil, but of *the plough*, that we are denounced by men who make no other attempt to answer our arguments but by obloquy and the withdrawal of their patronage. Yet, do those whose interests we are incidentally serving come to our aid? We are accused of being "sold to the manufacturers." How is this? In Rhode Island, the manufacturers *are some!*—and how many subscribers are there, does the reader suppose, for "The Plough, the Loom, and the Anvil?" Somewhere, we believe, short of thirty! in Pittsburgh, not half as many! Well, be it confessed, it is not for *their* interest *per se*, that we are labouring a little harder than any operative in their works; but because, as

here we have demonstrated, the prosperity and *proximity* of the loom and the anvil are indispensable to the *welfare of the man at the plough.* Yes! were we called upon in the midst, and by the united voice of every landholder in the United States, for whom we have been labouring conscientiously for more than thirty years, to express most sententiously and frankly our opinion as to what is best for the *farmers and planters of the United States,* we should say, with the hand upon the heart, and the heart upon the tongue,—"*The greatest possible variety of, and prosperity to, other pursuits, in the nearest proximity to the plough and the harrow in our own country.*" It was, as we have always avowed, principally to demonstrate this truth, the understanding of which is indispensable to general agricultural improvement, that the Editor consented again to connect his name and to give his whole mind and faculties to another agricultural periodical—one which we fearlessly say deserves to be read by every agriculturist in the Union, and not the least by those who dissent from its doctrines, but who are not afraid to look an argument in the face. Let those who differ with us show their confidence in their opinions by answering our arguments, not by *refusing to hear them.*

There need be no poorer land on earth than is, naturally, much of that of Massachusetts—a sorry and singular combination of dead-looking *sand and stone!* But population will draw the food *even from these!*—insure to the farmer a ready and steady demand at his door, and for the rest you may *leave him to the instinct and promptings of his own nature.* He will soon find out how to increase his crops. Cattle-shows serve him for amusing holidays. They amuse the wives and daughters, and give *them* too, very properly, a chance to show their ingenuity and skill in the handiworks of the butter-ladle and the needle; but the assurance of a *market at hand* is the great thing to insure improvement, for then the land gets back the refuse of its products; and these are sold without ruinous deductions to cover the cost of transportation. But look again at the course of things where a people have begun to realize the advantage of having the producer surrounded with prosperous consumers near at hand. In all North Carolina there are but *four towns* altogether, with a population rising *above* 2000, and of these *not one reaches* 5000! These are:—

Wilmington	4744
Fayetteville	4285
Newbern	3690
Raleigh	2444

While Massachusetts has *six* towns rising *above* 10,000, and *fourteen* above 2000, of which ten are above 5000: and then look at their educational statistics:—

In 1842, Massachusetts had scholars at the public charge	158,351
North Carolina	124
Whites unable to read or write in Massachusetts . .	4,448
In North Carolina	56,609

Then look at their railroads:—

North Carolina, with an area three to one, has . .	245 miles,
Massachusetts	700 miles,

in which, in 1848, she had invested of capital *paid in,* $25,889,591, and on which, *in that year,* 5,539,828 *passengers were transported!*

Now, readers, especially our friends of the old Atlantic States, you must not believe that we take any pleasure in bringing these facts before you, but feelingly the reverse—yet you must *remember what our office is!*

Have we not promised to devote our time and faculties, for the remnant of our lives, fearlessly and honestly, and, God knows, with heart as well as mind, to lay before you, as well as we can comprehend them, the *true causes of agricultural decline and of agricultural prosperity?*—and seeing here, that where people who have, by nature, almost no facilities for it, betake themselves to the manufacture of your raw materials, sending them back to you after deducting all the profits of manufacture,—seeing, I say, these people who, like you, were formerly sticklers for free trade, now diversifying their labour, and every year increasing the number of consumers in proportion to producers, their *land all the while becoming enriched and enhanced in value;* should we not be recreant to our own duty, and humiliated in our own esteem, if we failed to warn you to take this question of the development of your own resources and the protection of your own industry out of the hands of political partisans and office-jobbers, into your own keeping? How easy would it be for us to turn to the index of one of our own old volumes of '*the American Farmer*,' twenty-five or thirty years ago, and tell you from that, how to "pen and breed fattening hogs," how well they "thrive on pumpkins," how a "Mr. Peck made one hundred and twenty-four bushels of corn an acre," and "John Bellenger 119" in 1821, while in 1849, twenty-seven years after, the Maryland State Agricultural Society gives one of its highest premiums for a little more than half that! I might reprint for your inspection the valuable papers committed to me by that eminently worthy and distinguished friend of agriculture, G. W. JEFFREYS of North Carolina, in 1820, where, even on the subject of turnip-culture may be found one of the best papers that has appeared in any country at any time. I could show you how, twenty-eight years ago, Warner Washington of Virginia made fifty-five bushels of wheat to the acre, but what good would all that do? what would there be in it *new* and profitably available? What we want is a *market*,—consumers close by, here at home, growing up around us under circumstances and measures within our own control. Will you then, farmers of North Carolina, continue to cry "free trade"—continue to send away your produce out of your own State, to New England and to old England, you losing the cost of transportation; *or* will you enforce a policy that will compel the manufacturer of Europe, whether it be of cloth or of iron, to come to you and manufacture the wool and the cotton of your own fields, the iron of your own mines, and the timber of your own mountains, eating all the while your own corn, and your own mutton, your eggs, and your butter, your potatoes and turnips? for this you may rely on it is the true road, after all, that will ultimately enable us all to advocate free trade. Where the loom and the anvil are close to the plough, *milk* fetches as much per *pound* as *butter* does in North Carolina, where all are at the plough, and nobody comparatively at any thing else. If you believe in these doctrines, take hold of, and help us along with *this* plough. If you don't, tell us *why you don't!* but don't be content with mere naked denunciation and abuse, for—if affectionate admiration—if homage for their hospitality, their courage, their probity and their patriotism ever was well rooted in the heart of man, such sentiments have ever been ineradicably fixed in ours, for the people of the Southern States as a people! We have eat salt with them, and we think we know them. We are, in fact, ourselves, bone of their bone and flesh of their flesh, but that only makes us the more regretfully feel that, the longer they content themselves with crying free trade, sending all the products of their lands to be sold far away from their lands, the further will they fall back in the wake of other States in the race of industry and progressive improvement. To show that we do not exaggerate, hear the eloquent lamentations of Judge STRANGE, himself among the most gifted

and devoted sons of the old North State, in an address recently pronounced to the gentlemen of the Literary Societies of Davidson College, an address that, had we the power, we would cause to be prefixed to every school-book in the State.

"But with regret I say it—there is in our own State a lamentable (nay, shall I not be pardoned for saying, a shameful,) deficiency of State pride. Among the cultivators of the soil, among the more ordinary classes of our citizens, I trust, nay I believe, this is not the case. But among the educated portion of our people, this want of State pride is sadly conspicuous. Its monuments are around us in every direction. In our unequalled forests —in our deserted farms,—in our dilapidated villages,—in our decreased representation in the National Legislature. A large part of our products are ascribed abroad to other States. They deck themselves, as it were, in the plumage of which they have despoiled us. We share little in the profits derived from converting our raw materials into articles of immediate use,—of sending them to foreign markets, and making those exchanges which of themselves alone have rendered so many nations, both ancient and modern, proud, prosperous, and happy. A great portion of our fellow-citizens are enriching, with their talents and their wealth, other States, and in the same degree impoverishing their own, by a change of domicile. Yes, the North Carolinian wanders from his native land, and leaves the sweet fields of his childhood with scarce a tear of regret. Home! that word of such magic power over most hearts, seem to have with him an indefinite signification, or at least to know no limit but the wide-spread regions where the stars and stripes of America are seen to wave."

After all, the truth is great, let us hope that it will prevail. For ourselves we will follow wherever she appears to lead; even though it should be on the back track. Fools only believe themselves infallible—they only are ashamed to retract, when convinced of their error.

Boston.—The subjoined is an estimate given by the Boston Courier, of the amount its citizens have embarked in a few leading enterprises, principally since the spring of 1846:—

In factories and manufacturing cities, the cities enumerated, . . .	$13,000,000
Purchase of Railroads out of State, ...	8,000,000
Extension of old lines of Railroad, ...	6,000,000
Construction of new Railroads in Massachusetts, ...	7,000,000
Construction of new lines out of the State, ...	12,000,000
Boston Aqueduct, estimated cost with reservoirs and dead interest, . .	4,000,000
Stock taken in United States Loan, ...	7,000,000
	$57,000,000

Amount unpaid less than $7,000,000, July 20, 1848.

Estimated dividends to be received by citizens of Massachusetts, April to June, 1848:—

From Banks, ...	$2,000,000
United States Loan, ...	400,000
Railroads, ...	3,000,000
Factories, ...	3,000,000
Accumulation of Savings Banks, ...	1,000,000
	$9,400,000

The valuation of the State for 1848, if the increase of value in Boston and its vicinity be any criterion, must exceed $450,000,000, and the annual accumulation little short of $22,000,000.

Paring and Burning.—The immediate effects of this process are fourfold. 1st. It destroys a large quantity of organic matter. 2d. It alters entirely the texture of the portion to which the heat is directly applied. 3d. It reduces to a caustic state the alkalies and alkaline earth contained in the burnt portion; and, 4th. By means of these alkalies it acts upon the remaining organic matter of the soil exactly as lime does.—*Prize Essays of the Highland Society.*

REFLECTIONS ON THE PAST AND PRESENT CONDITION OF AGRICULTURE IN MARYLAND.

By the Editor of the Plough, the Loom, and the Anvil,—suggested by a late visit to the Easton (Talbot County, Maryland) Cattle Show.

A LONG-wished-for opportunity was lately embraced, to sojourn for a few days with our old friend, and quondam brother purser in the Navy, at his quiet and most enjoyable residence, at Perry Cabin, in what is called the "Bay side" district of Talbot County, Maryland.*

The occasion was used, to look again more minutely into the wheat and other husbandry of a region very attractive and remarkable on various accounts; and first and above all, on account, shall we say, of the *proverbial* morality and industry of its inhabitants—the paternal kindness of the master and the grateful and affectionate fidelity of the slave—the obvious watchfulness of the farmer for all discoveries in the art of tillage, for all means of restoring the perpetually exhausting effects of a husbandry that sends all its staples away to be consumed at a distance from the land;—and the attention, of some of them to the means of improving their domestic animals, as well by good keep as by judicious crossing,—if any crossing be judicious, which rarely is so in our judgment. These remarks, though made in particular reference to the farms of Messrs. Samuel and John Hambleton, near St. Michael's, would not warrant, by any means, the inference that we intend to apply them exclusively to their estates. Nevertheless it is easy to see, how profitably contagious, for every neighbourhood, must be examples such as theirs, that speak for themselves and proclaim to every one their good results. Of these results and their extended influence, it is enough to say, that lands which not many years ago might have been and were bought for from $10 to $15 and $20 an acre will now command $30, $40, $50, and even $60 an acre in that county; and how, reader, has this been brought about? —Not, you may be assured, by any extrarodinary change in the external or internal affairs or markets of the country, but by the diffusion of knowledge through agricultural journals, communicating to all the most successful practice of the most skilful and prosperous farmers; making common property of that knowledge which otherwise would have been confined to a few. And let it not be alleged that because a comparatively few patronize these journals, that therefore their influence has been small and limited; for be it remembered that the very act of giving support to, and reading such papers is *prima facie* evidence of a liberal and benevolent spirit, such as would lead the men who take and *read*—(for alas there are some who take and *don't read!*) them, to communicate for the benefit of others what they have found beneficial to themselves; and thus it often appears that men too stolid to read, or too stingy to pay a small pittance for what they contemptuously style *book knowledge*, owe much of their success in farming to that very knowledge, derived through the conversation and practice of those who *pay for it*.

As to the auspicious influence upon neighbourhoods of a few exemplary men, we remember reading in a letter of Doctor Johnson to a young clergyman, where he says he had been told by the dean of Carlisle, who was then a little rector in Northamptonshire, that it might be discerned whether or not there was a clergyman resident in a parish, by the civil or savage manners of the people. He added that, a very savage parish was civilized by a

* The proprietor, Purser Hambleton, was the intimate friend and close companion in battle, of the Hero of Lake Erie, hence the name of his place—*Perry Cabin.*

decayed gentlewoman, who came among them to teach a petty school. Let us then lose no occasion—nay, would we not be justified in going a little out of our way, as perhaps the reader will think we are now leading him, to exhort every agricultural community to remember, that, yet more than on the exhibition of fat hogs and sheep, the intrinsic value of their lands depends upon the uprightness, the morality and intelligence of their neighbourhoods—who would think, whether his capital be large or small, of buying a farm with an habitual drunkard or quarrelsome bully for a next neighbour? Who would seek to locate and bring up his children where there were no facilities for civil or moral education? Who would carry his flocks, where, ever and anon, thieves "break in and steal?"—but we are getting off from our subject,—it is only *dogs* that break in and destroy the flocks on the Bay side. Mr. H. and his neighbour had twenty fine fat sheep so killed in one night just before our visit.

If any one wants to see, as far as the season has advanced to develope it, beautiful specimens of ***drill husbandry***, let him visit the farms of the gentlemen we have taken the liberty to name, and if he possess the taste and susceptibility to the beauties as well as the profits of good husbandry, (a susceptibility by the by which constitutes an earnest of success, and one of the enviable delights of rural life and occupations,) he cannot fail to be charmed with the neatness and style of operation displayed in the fields to which we have referred.* A view of them will give him, if any thing were needed to give him, a better comprehension of the importance of ***perfect tilth***, so clearly and well illustrated in the essay published in the September number of the Plough, the Loom, and the Anvil, which, by the by, we were gratified to find, with the ***leaves cut open***, on the table at Perry Cabin,—an essay which we again say ought to be read and studied not only by every grain-grower, but by every cultivator of the soil in the Union. And here we may venture the inquiry, whether drill husbandry would not be fully vindicated and justified, were it only in consideration of the ***more perfect tilth*** and finer order of the soil which it superinduces? The drill used by Mr. Hambleton, and which operates "to a charm" was made in Wilmington, Del., and cost $100. It is an improvement on the English drill, and has the benefit of being sanctioned—in fact was brought very much into notice by Major Jones, President of the Newcastle Agricultural Society. With three horses or mules and one man, it will drill ten acres a day—the rows are nine inches apart, and the quantity of seed deposited 1¼ bushels. We hope next to see a trial and exhibition of the effect of the "horse hoe"—working the land in early spring between the rows of wheat,—insisted upon in England as indispensable to the highest success in wheat culture. Of that more particularly, we will have more to say, on some early occasion.

A very successful farmer, on one of the best estates in Maryland, and grower of the celebrated family-flour wheat, (we don't see why we may not out with his name) Mr. N. Martin of Talbot, in conversation with him, on the comparative advantages of drill and broad-cast wheat culture said he adhered to the old broad-cast, for he preferred to have his land "left a little rough at seeding."—He said that under the process of alternate freezing and thawing in spring, the clods melted down, and kept the roots of the wheat from being exposed and the plant "thrown out." But we apprehend that end is yet more effectually attained by the drill, which opens a trench and

* Their managers are both colored men, we wish we could recollect their names, that we might record them. Both were bought at their own request, lest they might be sold away; and both, to their credit be it said, have evinced their gratitude by faithful devotion, and have learned to be excellent practical managers.

leaves the soil a little elevated on each side, near the plant, and thus at every thawing in the spring these ridges are melted down over the roots of the plant. See on this very point the certificate of Mr. Huey, a practical farmer at Unionville, Chester county, Pennsylvania, in the last number of the Plough, the Loom, and the Anvil, where he says expressly, "My land being low, I have *lost greatly by the winter throwing the roots entirely out, which is wholly obviated by drilling.*" He had used Pennock's drill. Let us here venture the request that the Agricultural Society of Talbot will appoint a committee to collect testimony and report on the comparative advantages of the two modes of sowing. And while we are on the subject, we may add, that we learned, in a steamboat conversation with Mr. Robert Jenks, of Newton, Bucks County, Pennsylvania, one of those active-minded farmers, who not only takes pains to learn, but has the enterprise to adopt useful improvements in agriculture and horticulture,—that he found an increase of (we think) not less than seven bushels to the acre by drilling.

On the two estates of which we are speaking, as well as by two of the tenants of Messrs. H.—the wheat-reaper, invented and recently much improved by that worthy, ingenious, and indefatigable mechanician, Obed Hussey, is used with unqualified approbation and the most economical effects. With the assistance of two men, drawn by four horses, it reaps, and perfectly saves fifteen acres a day, leaving for the gleaner who would follow after it, a perfectly barren field. The judgment of those who have used it is, that, in a field of fifty acres, it saves its own cost, in a single year, by the double saving of time and grain—and thus presents an appropriate occasion to reflect, upon the "penny-wise, pound-foolish" practice of many, who cannot bring themselves to lay out portions of their crop, large or small, in the *purchase of manures and more perfect machinery.* They are willing to borrow or rob their land of all they can get out of it, but seem wanting in faith or honesty to return any portion of what they extract—forgetting that it would often, even for a series of years, be true economy, to restore to the great machine of production *every dollar of their net earnings.* In doing thus, they are but lending to themselves, and are sure to be repaid with compound interest. Adding from year to year to the value of the land, the farmer increases his security and augments his capital with even more certainty than the money capitalist, who adds interest to principal, in as much as the farmer has all in his own hands, and it cannot be said of land, as of other "riches," that "it maketh itself wings and flieth away."

Thus it is, by examples and influences such as those to which we have referred, that we see land throughout the peninsula, from the Pennsylvania line to the Capes, rising in value, wherever morality attracts and inspires confidence and industry lends the benefit of her example. It may well be doubted whether, in any portion of the Union, the agriculturists that belong to it are better informed in the means adapted to secure increased productiveness to their estates, than are the farmers of the Eastern Shore of Maryland. If there be, as already intimated, some who deny themselves the advantage to be derived from monthly advices, in agricultural journals, of all that is going on to advance the great arts of cultivation and husbandry, they reap the benefit of such advices from daily intercourse with, and observation of the many who wisely make it a point to keep themselves thus posted up; and if, therefore, there be not a more rapid melioration of the soil and average increase of crops, it must be ascribed to other causes than want of knowledge, of industry, and of care. One of these, and a very obvious cause, is the exhausting nature of the crops they cultivate, consisting almost exclusively of grain, all of which is to be sold away at a distance from the land, to which it restores scarcely any thing in the way of remuneration. How essentially

different is the case, where the products of the land are consumed upon the land, and all the fertilizing ingredients from which they spring thrown back upon its bosom, even in more available form, for the ends of reproduction!

In many parts of England, in Cornwall for instance, where protection is given to manufactures, and the loom and the anvil drawn close to the plough, they carry thirty cattle to every hundred acres of arable land.*

But while it cannot be denied, that though there is among the farmers of this beautiful region a lively apprehension of the true means, as well as of the necessity of renovating their estates, and a most laudable, and, we believe, nobly generous rivalry in the race of improvement, the reader must not suppose that the work itself is to them a work of mere amusement; one that will allow the farmer to while away his precious time in talking politics at the cross-roads groggery, or the blacksmith's shop—at the "Trap," or the "Hole in the Wall."† So far from that, there is no agricultural community on whom circumstances impose more urgently, both the obligation and the necessity, to convert every material and resource into manure, that they may give back to the land the elements of fertility, whereof it must be so certainly and largely deprived, under their exhausting course of exclusive and oft-repeated grain crops. Two white crops in three years, and the grass crop pastured down, is enough to break the heart of the stoutest land; and the reader may be assured that to keep it up, much more to improve it and augment its crops, however little, "is no child's play." On the contrary, it demands great labour, and the most assiduous, unceasing care and industry, and sagacious management. One cannot but be struck with admiration, therefore, at the resolution and perseverance by which these "bay-side farmers" are enabled to cover over their whole corn field shift, with manure of some sort, whenever that crop comes round in the three or four shift rotation, being a third or fourth of their arable land. This manuring is done by a resolute system of penning their cattle in the field destined for corn in summer, or in the barn-yard throughout the year, and keeping them well-bedded and supplied with "pine shatters," corn stalks, cleansing of ditches, sea-ore, &c. If on this "shore" they are cut off, by its want of effect, from that great and most convenient of all renovators, *plaster of Paris*, so cheap and so portable, and which, over a great part of the country, acts with so much energy, (while here it is generally powerless,) they enjoy, on the other hand, the benefit of sea-ore, marsh mud, and marl, and oyster-shell lime—the one or the other, or the materials for it, (and often all,) on almost every farm on the peninsula —for it is the very distinguishing and remarkable feature in the geography of all these counties, that almost every farmer is on the water and has the benefit of a "landing," within a few hundred yards of his granary. Indeed, but for this, with all their industry, and their laudable watchfulness for the means of economizing labour, and of repairing the exhaustion otherwise so inevitable under such a course of husbandry, which carries all off, and consumes nothing on the land, they would yet have long since been forced to *abandon and give up in despair* this most beautiful portion of the State. Yes, though it may startle at the first suggestion, yet, when we look back at the history of Maryland, her agricultural and popular statistics, we shall see that if the counties of the Eastern Shore had been compelled to transport their produce, such as it has been, to the markets in which it has been sold, the same distance by *land* instead of *water*, the whole country must have been surrendered. As it is, scarcely a

* Mr. H., we observed, kept about twenty on his home estate of 400 acres.

† The names of two towns in Talbot.

farm can be found five miles from navigation, in many of the counties, while for almost all the vessel comes to the door, and the product, whether vegetable, fruit, grain or animal, is put on board and floated off, as on a natural canal, to market, at an expense of four, or at most five cents a bushel, and other things in proportion, for any distance, even two hundred miles. If, then, under these advantages, these eight counties went back more than four thousand, by the official returns during the last decennial period, from 1820 to 1840, where would they have been had they been compelled, as in the interior counties of Virginia, back from tide-water, where they have to pay 15, 20, 25, and even 30 cents per bushel, according to distance, to send their grain over bad roads, retaining only the straw for their cattle, and which, scarcely keeping life in their bodies,) without a single root in the way of medicine or nutriment,) leaves them mere skeletons in the spring, to enter on pastures as meager as themselves.*

Finally, a stranger is forced, on a view of this extraordinary country, to apprehend that, topographically, (being almost and everywhere perfectly level,) it is incapable of being *thoroughly drained*, and that it is too much inclined to run into a condition of great compactness, and is with great difficulty brought to and kept in that *friable* condition, such as the reader will find illustrated by figure 3, page 245 of this volume; and then again, too apt to pass from one extreme to the other, as from the condition represented in that essay by figure 2, to that indicated by figure 4. And this peculiar nature of the soil, expressively called a *pewtery* soil, seems to belong even more to the land in this bay-side district than in other parts of the county. In this, however, we may be mistaken. Were we to venture on practical suggestions for the improvement of the agriculture of this unique and most interesting district of country, intersected in all directions by navigable rivers, and creeks, and coves, and inlets of infinitely various forms, and offering to every one at his door, and without price, not merely a natural canal to all the great cities of the Union, but, for his personal enjoyment, all the luxuries of salt-water,—what should we say further? We should say, in the first place, that having entered upon the use of the drill, we want next to see them try the effect of *horse* or hand-hoeing their wheat. A hand-hoe has lately been invented in England, which (not having the account of it at hand) we will more particularly notice hereafter, and which, if available there in that form, we are quite sure might be used on lands in the state of that of the Messrs. Hambleton's, and of one of the tenants of Mr. S. H., to whom the drill had been loaned.

We have not been, for thirty years, in this sort of intercourse with farmers

* We subjoin the population returns for the eight counties of Maryland alluded to, according to the censuses of 1820 and 1840:—

	1820.	1840.	
Caroline	10,041	7,806	
Cecil	16,048	17,232	
Dorchester	17,755	18,843	
Kent	11,453	10,842	
Queen Anne	14,952	12,633	
Somerset	19,579	19,508	
Talbot	14,389	12,090	
Worcester	17,421	18,377	
Total	121,638	117,331	
Loss in ten years			4,307

But we apprehend the next census will begin to tell another tale. This peninsula of all alluvion counties has touched the bottom, and we may hope will continue to rise until she ascends above the highest level she has ever yet attained.

without knowing how much they are inclined to listen with incredulity, if not with derision, to all new suggestions of this sort; but we have lived long enough, too, to see many prejudices overcome, and many a mulish temper become docile, after years of observation of the efficacy and the profit of things which they had at first, with little reflection and less forecast, condemned and ridiculed. Who does not even now witness the dogged obstinacy with which the use of the drill is resisted, just as, twenty-five years ago, we were laughed at for distributing *birds' dung!* and describing its wonderful effects under the outlandish name of *Guano!*

The gentleman, in view of whose management we are writing without his knowledge, and of whom we have already spoken more than he would desire, told us that, by using the drill, 38 bushels of seed-wheat had served instead of 60 that would otherwise have been needed. Here, then, is a positive saving worthy of attention, being nearly one-fourth of the cost of the machine at once, to say nothing of the superior condition of the land when prepared for the drill, to which we have already alluded; but in England they look far and materially beyond these two advantages, from adopting the use of the drill. Hence in the excellent essay in our October number, the *attentive* reader will remember that the writer dwells particularly on the advantage it affords of horse-hoeing, going so far as to say—"The *whole success* of the drill husbandry is owing, *in a great measure*, to its *enabling you to stir up the soil well during the progress of your crop;* which stirring up is of no value beyond its effects in more minutely pulverizing the soil, and increasing, as far as possible, the size and number of the interstitial canals between the particles of the soil, so as to freely admit air and moisture, and to render it more permeable to the roots in their search for food." We should think, also, that the destruction of grass and weeds would be entitled to some consideration. But, at all events, let us, be it upon never so small a scale, see the experiment of *stirring the soil* in spring, between the drills, that we may know the effects, in this country, of that which, in England, is said to be in a *great measure* the cause of the success of drill husbandry. Another thing which we want, adapted particularly to these level *old* fields without stone or stump, is a drill fitted for the distribution of *bone dust*, night-soil, guano, and *other prepared manures;* all of which, and especially bone-dust, we want to see freely tried on these lands. To conclude for the present, (meaning, however, to return to the subject, with a view to some observations on the management of their barn-yards, and other arrangements for the accumulation of manure,) it gives us great pleasure to express our humble opinion, for what it may be worth, that, in the general way, the Eastern Shore of Maryland is in a course of regular and steady, though in the very nature of the pursuit it must be gradual, if not slow improvement. Such is indeed the sure result of amelioration in the habits of the farming community. There is less of the common practices of gaming and frolicking than formerly. No longer can it be said, as it was written of the planters and farmers of Virginia and Maryland before the Revolution, that those "who have the power of being good cultivators of their fields abandon them to the overseers of their negroes, and pursue only their own pleasures." There is observable, every year, a more general disposition to inquire and read on subjects immediately connected with their industry—greater watchfulness for improved implements, improved processes, and new means and materials for manure. *En avant*—go a-head—seems to be their motto; and long may it so continue. In this increasing *thirst for knowledge* and ambition to excel, is the best security on earth for increasing products. Without these, when was any community ever known to improve? Of all guarantees for improvement, the most valid is the abiding consciousness that we have *always something*

to learn! Should Eastern Shore men, or any men, continue to act under that influence, those who live to look back, through a retrospect of twenty-five years, will find their estates as much more advanced upon their present condition as they are now behind what was written of them before the Revolution, when it was said—

"Wheat they sow, as we do in England, in October; about two bushels to the acre, which produces seldom less than 25, sometimes 35 and 40. Rye they do not cultivate much, as their lands are in general good enough to give them good crops of wheat. Barley produces 25 to 40 bushels; oats, from 30 to 60; peas, from 10 to 60; Indian corn, *seldom less* than 50, and sometimes 80. Turnips and cabbages thrive in the greatest luxuriance, and produce crops far beyond any thing we know of in Britain. Potatoes, also, with good management, yield, without any dung, crops much greater than can, in these islands, be gained by the force of manuring: yet are the farmers of these colonies (Maryland and Virginia) most inexcusably negligent in not giving their crops due justice, in *properly* preparing their lands, and keeping them, during their growth, free from weeds."

What we are inclined to think as to the capabilities of the Eastern Shore, for root culture, and their readiness to go more extensively and profitably into the rearing and fattening of sheep and cattle, is glanced at in the remarks of the writer in "The Baltimore American." We may extend, to a greater number of readers, whatever of interest these remarks may possess, by following them with the "*table of averages*" given in the Patent Office Report for 1848—the compiler of which says, "in many instances, there was almost an entire similarity in the judgments formed, in the case of the most prominent crops." How far that judgment is to be relied on, as accurate, every reader will judge for himself. (See p. 363.)

Let him turn to the same document for the estimate of the *expense* of cultivating these crops, per acre or bushel, and he will be prepared in some measure to see what is the *real condition* of the agriculture of the United States, and whether there is not a worm of some sort gnawing at the root of the tree, which is not likely to be exposed, much less killed, merely by forming societies to hold cattle shows, *and conventions to diminish products!* Were such conventions ever held in a country whose agriculture was improving?

The following, from "The Baltimore American," so nearly presents our own views, that we need say no more of

THE AGRICULTURAL FAIR AT EASTON.

A gentleman who was present says that he has never seen any community more obviously alive to all that can conduce to improvement in their pursuit and condition, than was to be seen then and there, among the gentlemen of Talbot.

Not only did that feeling seem to be universal among the farmers, but it evidently derived the best sort of stimulus and support from their *wives and daughters and sisters.*

The ladies of Easton and the neighbourhood were at the exhibition, not only in strong force of numbers, but in the force of their useful and elegant handiworks of housewifery.

There was an excellent display of agricultural machinery, a most im-

portant feature in all such shows; but except the very various and very beautiful display contributed by the ladies in the several departments of domestic economy, strictly speaking, the most remarkable feature of the exhibition was the uncommon excellence of the most *important of the vegetable tribes:* the potato, the carrot, parsnip, squash, broccoli, drum-head and savoy cabbage, with others of the brassica family; and turnips, from Otway," *Col. N. Goldsborough's* farm, cultivated in the open field and in white-oak wheat land, without extraordinary care, and yet of a size almost incredible, for a country in which farmers seem possessed of a notion that they cannot make turnips as they are made in England, eminently subservient, nay, indispensable to the fattening of their bullocks and their land. Some of these turnips would have measured, in their largest diameter, twelve inches. In short, these samples of what the Eastern Shore *can do*, in the way of culinary vegetables, could not be viewed without at once suggesting the idea, that instead of confining their labour, and care, and capital exclusively to two *grains*, to be transported and consumed away, far off from their lands; is it not the natural destiny of this most remarkable country, to consume their produce upon the land, fattening sheep and bullocks, and with the surplus of their vegetables, supply the great markets of Baltimore, Philadelphia, New York and Boston, sooner and cheaper than it can be done from the colder climates and dearer lands and labour from which these cities draw their present supplies.

DR. THOMSON'S ADDRESS.

But if the visible and physical part of the Easton Exhibition was entertaining and worthy of the farmers of Talbot, the intellectual part of the repast—the *address* of Dr. Thomson, of Wilmington, (in whom, like a true son of the Old Dominion as he is, there is no tire in the good cause,) was both eloquent and instructive. Though in the full practice secured by his eminent professional abilities, the doctor has for many years been one of the main-springs of that onward movement in the art and practice of cultivation, which has so much distinguished the little State of Delaware, and his excellent address on this occasion fully evinced that his knowledge of the philosophy and the rights of agriculture is equal to his untiring zeal. If the views of all who follow it for a livelihood were equally clear and elevated, they would not be long in making their voices heard and their influence felt in the councils of their country, to the end of creating departments and making appropriations for enlightening, benefiting and advancing agriculture, as well as other interests and institutions for which departments have been created and education provided.

In a feeling of due appreciation of the soundness of his views and the value of his suggestions, the Society moved unanimously their thanks to the doctor, with a request of a copy of his address for publication.

Our informant noticed, what it might seem almost superfluous to add, so well is it known, the characteristic hospitality of Eastern Shore men. Not contented, as in some countries, with "How d'ye do?—I'm glad to see you—how have you been, and fine weather, won't you come and see me?" but an instinctive habit of *hunting out and caring for strangers on the ground*—a cordial shake of the hand—a look full in the face—a hearty invitation to go and eat salt with them. Their house is made your home, in the full and true sense of the word, their servants, their horses and conveyances are at your command—equally ready to "welcome the coming and speed the going guest."

TABLE OF AVERAGES OF CROPS IN THE UNITED STATES.—*Average, per acre.*

States.	Wheat.	Barley.	Oats.	Rye.	Buck-wheat.	Indian Corn.	Potatoes.	Hay.	Hemp or Flax.	Tobacco.	Cotton.	Rice.
	Bushel.	Bushel.	Bushel.	Bushel.	Bushel.	Bushel.	Bushel.	Ton.		Lbs.	Lbs.	Bushel.
Maine	7–12	15	25–35		20	30–40	50	1–1½				
N. Hamp.	12–25	20–40	25–30	15–20	15–20	30–50	75–100	1–4				
Vermont	10–40	—	25–40	10–25	15–25	30–50	100–300	1–5				
Mass.	—	35–40	20–60	12–25	—	35–40	100–150	1				
Conn.	—	—	—	—	—	—	50–100					
N. York	8–20	15–40	25–100	10–25	12–60	15–110	20–200	1–1½	10 bu. seed.			
N. Jersey	16–30	—	15–35	10	6–15	22–60	40–200	1¼–2				
Pennsyl.	10–25	20–45	25–75	12–50	20–40	30–80	com. 100–250 sweet 70	1–2½				
Delaware	14	—	26½	—	—	28½						
Maryland	6	—	10	5	—	—	100	1	—	1000		
Virginia	8–20	—	10–35	—	—	10–80	com. 10–100 sweet 120	1–3	—	1000	800–1000	
S. Carolina	8	20	10–12	5	—	8–15	100–200	—	—	—	300–400 w. & seed.	40
Georgia	8–10	—	12–60	10	—	15–50	150–300	—	—	—	200–1000	
Alabama	8–15	—	10–30	8–10	—	15–60	200–400	—	—	—	700–1000	20–30
Miss.	—	—	20	15	—	30	c. 50, sweet 80	—	—	—	1500 seed, 400 cl'd.	
Tennessee	6–10	—	10–20	10–12	15	35	50–100	2	250 lbs.	1000	500–700	
Kentucky	13–15	—	30	—	—	40	—	2				
Ohio	10–20	15–25	20–45	12–22	12–20	30–50	12–200	1–2	1 ton.	1 ton.		
Indiana	12–30	25–40	25–45	12–30	8–30	40–65	com. 5–300 sweet 100	1–3	1000–2000 lbs	800		
Illinois	10–25	—	20–45	20–25	15–40	35–80	com. 75–100 sweet 150–200	2–3	—	1000–1500		
Michigan	15–25	25–30	25–60	25	15–40	20–40	150	1½–3				
Iowa	12–30	15–30	30–50	15–25	8–10	40–60	100–150	1½				
Texas	30	—	—	—	—	25–50	—	—	—	—	800–1500	

THE PATTERSON DEVONS

Are called for, north and south, a little faster than they can be supplied —nor is it to be wondered at, seeing the pains that Mr. Patterson takes to breed them in the highest degree of purity and perfection. It is but just that consummate skill and undeviating integrity and elevation of purpose should be thus properly estimated by the agricultural public. There would be, if we may say so, a reconcileability in buying occasionally even an inferior animal, by any chance, from one who takes so much pains to have the best—but easy, as it is not, without speaking beforehand, to get good things from Springfield, it would be yet more difficult to get such as are indifferent: for when such do turn up, under his vigilant eye, the knife is their infallible doom.

We had to-day, Nov. 12, the pleasure to see three fine calves from his unequalled (we believe even in England) herd of Devons on their way to Western New York, there to reassure the blood of Mr. Washburn's Devons, already so distinguished in the agricultural annals of that State.

One of them was the property of L. & J. Burney, young farmers of Otsego township, Otsego county. One may always speak and augur well of the stock and stock-management of those who thus cross the country, without care for distance or expense, to hunt up the very best to be had "in their line;" as these hard-fisted practical farmers have done before, and now again, having taken the precaution to secure these bull and heifer calves, by timely application to their breeder. These young travellers, like some older ones of wide renown, attracted crowds as they moved along. We regarded it as a compliment to have them stop and look in on passing the sign of "The Plough, the Loom, and the Anvil." We should like to see 50,000 Devon oxen in the place of 50,000 out of the 300,000 gluttonous *horses* which it is the pride of Pennsylvania that she feeds—being 100,000 more than are kept by all the six sagacious Yankee States united.

WHERE ARE THE NATURAL SHEEP PASTURES OF AMERICA?

In the South. Mr. Rockwell of Michigan, in an excellent practical paper for "The Wool Grower," insists on the necessity of *sheds* to protect the flocks from *cold rains*. He says:

"Thousands of sheep died last winter in Ohio and Michigan, simply for the want of protection from the cold rains in the early part of winter. It is not cold, dry, snowy weather that injures sheep, but cold, rainy weather. Mark that. Let every wool grower provide for his flock some cheap, temporary shelters, (unless he choose more costly ones,) and see that his sheep are driven under them and compelled to remain there during the storm.

The time and expense of this will receive a tenfold remuneration in the well-being and healthy condition of the flock. The thousands of sheep that died from exposure last winter in this State and Ohio, would have enabled the owners to have put up twice the amount of shed room needed for their flocks for twenty years to come."

We are far from wishing to discourage northern wool growers, but there is, in the above, a peg, long enough and strong enough, to bear a strong argument in favour of the superior advantages of southern latitudes. Without having time or adequate knowledge to go into the comparison ourselves, we may refer the reader to the article on "The Nature and Growth of

Wool;"* and here we may ask, whether such articles are not of more real value, containing, as they do, the natural history and philosophy of wool-growing than a thousand items, such as it would be easy to extract from old papers, about the extraordinary weight of particular fleeces. By the by, let us ask the farmer, patron of this journal, who is a parent, whether he puts the numbers into the hands of his son, who is to be a farmer?

SHEEP-GROWING IN NEW YORK.

The facts stated below certainly indicate great care, and warrant the presumption of consummately good management on the part of the writer, Mr. J. D. Patterson. Give us his practical skill—with Randall's unequalled work on Sheep Husbandry, which any one shall have delivered at his Post-office, free of all charges, along with the Elements of Agriculture, for $1; and then give us security against sheep-killing dogs, which may be had by the use of good shepherd's dogs, and we would not desire a larger fortune than could be realized in Virginia, the Carolinas, Georgia, in other Southern States, or in Texas or Arkansas, by sheep-breeding and wool husbandry.

T. C. Peters, Esq.

Dear Sir:—In the August No. of the "Wool Grower," you published the statement that I sent you, of the weight of the wool taken from the pair of imported lambs that I purchased from Mr. Taintor, at Hartford, Conn., in August last—that of the buck being 14½ pounds, and the ewe 10⅝ pounds, but at the same time you "protest against the whole system of publishing large yields of wool, without at the same time giving the weight of the carcass upon which the fleece grew." I will therefore state, for your information, and that of your readers, that the lamb from which I sheared 14½ pounds, weighed the day he was washed, and before he was put into the water, 179 pounds, from which deduct 14½ pound of wool when dry, and say 6½ pounds for dirt, would leave as the actual weight of carcass, 158 pounds.

I do not pretend that the wool of my imported Merino lambs, or my flock of full-blood Merino sheep is as fine as that cut from a flock of full-blood Saxony sheep, but it is quite certain that more fat mutton will be found from a carcass weighing 158 pounds, than from one that will "not weigh as much by two-thirds."

The health and constitution of sheep I consider important to the farmer; and I will here state that I have never lost one per cent. by disease since I have kept a flock of sheep, and I have never failed to raise more lambs than I had ewes on my farm. Last year I raised 141 lambs from 126 ewes, and I have now 182 lambs from 159 ewes, 73 of which are from the buck imported last year, and you can judge of their size when I tell you that 10 of my buck lambs weighed this day 801 pounds, and 10 of my ewe lambs 680 pounds. They were taken from the ewes about the first of the present month, and in consequence of the severe drought, their feed has been very short and poor since that time. J. D. Patterson.

Westfield, Chatauque Co., N. Y., Aug. 24, 1849.

Large Bunches of Grapes.—A friend, who lately visited the Duke of Portland's garden at Clumber, reports having seen a bunch of Black Hamburgh Grapes of the weight of 10 lbs.; if so, we generally know little how to cultivate even that desirable but comparatively common fruit? Is the thing possible? *G. O. L.* [We do not believe the statement.]—*English Paper.*

* Postponed until our next, from want of room.

ON SHEEP HUSBANDRY IN THE SOUTHERN STATES.

We have seen nothing so conclusive as to the adaptation of the Southern States to sheep husbandry, as the following, founded as it is on the ample experience of a gentleman of independent fortune, enjoying ample resources of a different sort, and therefore without motive to distort the question, and of a candid and discriminating judgment. We much regret that pre-occupation of our columns prevents us from giving, until next month, Mr. Cockrill's letter from the Patent-office Report of 1848. We have read it with deep interest, as relating to a question of great importance, and as well fitted to confirm all that has been said in favour of looking to this branch of husbandry as a vast resource in reserve for the Southern landholder. With Mr. Randall's more elaborate and yet anywhere unequalled work on Sheep Husbandry, as a guide, corroborated by the experience of Mr. Cockrill, what young man of any enterprise need be afraid to go largely into sheep-breeding on the cheap hill pastures of our Southern States, or the prairies of Texas—especially when he contemplates the immense extension of our commercial relations, and demand for wool and mutton embraced in the prospect before us?

[From the Banner & Whig.]

Nashville, October 12, 1849.

Dear Sir:—I have just received the Patent-office Report for 1848, and make my acknowledgment for the insertion of my communication on Wool and Sheep.

You seem to think I am decidedly mistaken on the question of value and quality of sheep *here* and in Europe, and in some aspects I have misconstrued and misrepresented "the views of the able writer on German Wool and Sheep."

I refer to my article, for my views and my objections to the decided preference given to Germany over the produce of the United States.

I contended that the United States was a better sheep and wool country than Silesia or any other *high latitude*, and that as good bucks can be purchased in the United States for $50, as those in Germany which cost $1500 or $2000.

You, as commissioner, adjudged that I am in error, and that Mr. Fleischmann's views are correct. From that decision I appeal, but not to Judge Cranch, who is learned in law, yet not qualified to decide this case. I appeal to men who have studied sheep husbandry and wool-culture for years, as I have done.

Now as you have decided that I am wrong in the objections urged, and the position taken by me, in favour of the low latitudes of the United States against the high latitudes of Europe, I wish to afford you an opportunity of testing the question of *error*, and let us ascertain, by the decision of competent men, whether you or I be in the wrong in this matter.

I am not a betting man, and therefore make no banter to the world at large, but to you who have determined and published that I am wrong, and entirely mistaken in these questions, I make the following proposition:—

I will confine myself to my own flock in latitude 30°, and I will give you all Silesia to select from, which you stand at the head of the continent for a fine and constant character of the fleece, you shall select a buck and a ewe from the most celebrated flock in that German or Prussian province; and I will exhibit against you in the city of Nashville, for any sum from $50 to $1500. The premium to be awarded by competent judges to those animals presenting the greatest number of valuable points and qualities, and the best combination of these points for the production of *superfine* broadcloths. Time of exhibition and other details to be agreed upon hereafter.

I fix the place of exhibition, because I give you all the flocks in Silesia to select from, but you are not to come south of that latitude, being about 51° north, in making your selections.

I have said that the low latitudes are superior to the high ones, in wool-culture, and I wish an opportunity of showing to others that I am not wrong, and not mistaken on this subject.

I remain, very respectfully, your obedient servant,

MARK R. COCKRILL.

Hon. E. BURKE, *Washington City.*

GRUB IN THE HEAD OF SHEEP.—HOW TO PREVENT.

MR. S. B. ROCKWELL, of Michigan, says:—

It is an old adage, that an "ounce of prevention is of more value than a pound of cure." The truth of this remark has been strikingly verified among Vermont farmers within the last few years. Once they waited for disease to show itself in their flocks, and then endeavoured to apply a remedy. Now they forestall disease by applying the remedy in advance. Once a year, just before winter commences, it is customary to inject a solution of Scotch snuff up the nostrils of each sheep in the flock. This is a sure preventive against grub in the head. One man provided with a syringe, with two hands to catch and hold the sheep, will medicate from six to eight hundred in a day. The fall is regarded as the best time. All flocks treated in this way have invariably escaped this dreadful scourge. Fouls or foot-rot is successfully treated with a solution of blue vitriol and spirits of turpentine. The itch or scab, in its worst forms, I have seen yield its virulence, and disappear wholly by feeding freely of sulphur, and applying unguentum to the parts affected. Let those who are just commencing the business of wool-growing pay proper attention to a few simple rules, and success will crown their efforts. Above every thing else, they should see that their flocks are driven under shelter, (else they will remain exposed,) and kept there until the rain and sleet has passed, and the storm abated. Sheep love the rain, and prefer to be in it: and when succeeded by mild weather, it is healthy, but when followed by freezing winds, it is highly injurious, and should never be permitted. Every thing indicates, that for the next ten years, the wool-growing interest will be the great leading interest of our country.

The rich and productive soil of Michigan, with her mild winters and facilities for a good market, holds out strong inducements to her enterprising inhabitants to make wool one of the great staple products of the State. The time is not far distant when this branch of agricultural pursuit will be second to no other in the West, and when she will eclipse the Eastern States in the size of her flocks and quantity of fleece. It is now supposed by competent judges that Michigan has already over one million of sheep, and in successful hands will soon exhibit thousands of fields, covered with extensive flocks of the Merino, furnishing not only a supply for several millions of looms and spindles propelled by her own waters, but also a large amount for export to other sections of the Union. No branch of business promises so good a return for the labour and capital inv[illegible]d none more congenial to the feelings of the American farmer [illegible]nat of a scientific and successful shepherd. Success to this enterprising State, in this laudable and lucrative branch of agricultural wealth.

Trees.—A solution of lime-water and turpentine, not only prevents trees from being barked by the beetle, but also at the same time prevents them from being attacked by the fly.

THE FARMERS' NOTE-BOOK.

THE PROGRESS OF AGRICULTURAL IMPROVEMENT IN THE WORLD may be imagined from a single fact. In the "Farmers' Letters to the People of England," written in 1768, the author says that in a journey through many counties of England, "I found, upon inquiry, that scarce a plough moved without four horses to draw it—generally five, and frequently six." Now, Professor Mapes, with a pair of horses, drives his sub-stratum plough, we understand, twenty inches deep as a common thing, and that through "clay;" and, if we recollect, his span of oxen cut a furrow of sixteen inches wide, and between two and three feet deep. It is therefore evident that there must be, as every one knows there is, great improvement in the form of the plough, and perhaps, too, in the strength of horses—as there certainly is, as cattle are at least fifty per cent. heavier, on an average, than at that time.

But there are those who think us not entitled to claim credit for quite *all* the discoveries and improvements we boast of. In essays on husbandry, one hundred years ago, it was contended that TULL had no right or even pretension to claim the invention of the drill-plough, which was then said to have been in use in European countries half a century before Tull put pen to paper. Nor, as it was then asserted, did England owe to him the field-culture of turnips, but to the Flemings, a century before.

Folding sheep and wheel-ploughs were thoroughly known in England in the reign of Henry VIII. Nay, says the author to whom we have referred, in here and there an instance, our industry has been inferior to that of our predecessors, or at least it may be observed: *Priscorum aut cura fertilior aut industria flicior fuit.* "We plough less and sow later than they did. Marl (the most lasting and cheap of all the manures, which may be found in numberless parishes throughout this kingdom) is known and used much less at present (before 1768) than in the two preceding centuries. In a word, few manures of much consequence have been lately discovered, except peat ashes, the sowing of which is confined within a circle of twenty miles diameter throughout, (of more or less valuable kinds,) is to be found in most counties of our kingdom."

But it may gratify those whose pleasure in agricultural reading leads them to look beyond its mere dry details of pounds and pence, bushels and pecks, into its history and literature, that we should for their use record the following

TABLE *of the mean price of Wheat in London, at several periods, for the space of* 169 *years, prior to* 1762.

	Years.	Price. £	s.	d.	Years.	Price. £	s.	d.
From 1594 to 1612	19	2	2	5¼				
1613 — 1637	25	2	7	4	69	2	8	5¼
1638 — 1662	25	2	15	8				
1663 — 1687	25	2	5	3¼	25	2	5	3¼
1688 — 1712	25	2	8	5½				
1713 — 1737	25	2	0	7½	75	2	2	5¼
1738 — 1762	25	1	18	2¾				

AN EASY RULE FOR FARMERS.—A correspondent of the National Intelligencer thus corrects a paragraph which is going the rounds of the press, giving the mode of computing the English quotations for a quarter of wheat into American measurement and currency:—

"The 'quarter of wheat' is one-fourth of a ton, (2240 pounds,) or 560 pounds. The standard bushel of wheat is not the 'Winchester' bushel, but one-eighth of 560, or 70 pounds. Now, in our country, the bushel of wheat

is 60 pounds: therefore, divide 560 by 60, and the result, or nine and one-third bushels, will be the equivalent, according to our standard, for the English 'quarter of wheat.' But, to make this available to the farmer, let him divide the price per 'quarter' in sterling shillings by nine, (instead of eight,) and multiply the quotient by twenty-four, for the price per bushel (American) in cents. Thus, at 54 shillings per quarter, 54 divided by 9 being 6, which, multiplied by 24, gives $1·44 per bushel."

YET MORE OF PEAT CHARCOAL AS A DISINFECTOR AND FERTILIZER.

Since the long article, as we fear some readers may consider it, on "*Night-soil and Irish Peat Charcoal*" was cast by the stereotyper, we have received the account of another meeting in London, at which very interesting, and, if we mistake not, for the American farmer, very important disclosures were made, by Mr. Rogers, as to the *absolute fertilizing power of peat* charcoal particularly, and of itself. We shall give the whole of that explanation in our next, in the full persuasion that, in many parts of the United States, there exist beds of peat that may be, with great profit, used first in barn-yards, and other more offensive deposits of excretiæ, besides being applied alone, and directly, as a manure. To reconcile the reader to the space already yielded to this subject, we must so far anticipate the supplemental expositions by Mr. Rogers, as to give the following short extract from them, which will be re-incorporated into the whole article intended for the January number of this journal. We look on this subject as one of great interest, probably to readers generally, but certainly to all in Massachusetts and other *peat* countries.

In the mean time, we invite from our readers communications as to deposits in our own country of peat, such as it may be supposed would supply a material of like value. And here we take leave to suggest that some farmers on the tide-waters of the Chesapeake Bay, on which there are so many wide margins of worse than useless marshy grounds, should see whether, on being dug and dried, the substance of these marshes might not be carbonized, as in kilns of wood, and used with a profit in their barn-yards, or at once in their fields.

If the "*American* Institute," so called, with its ample means, were not any thing but what it professes to be, and, with its means, ought to be, it is there that the farmer might send such substances with assurance, not of a newspaper puff, that such a thing had been received, and that some pedant had pronounced a learned discourse, or read some outlandish translation at the meeting; but they would have a *thorough analysis* made at once, by *competent men*, of real science, adequately and fairly remunerated for the trouble and labour of doing it, and would publish the result as other New York County Agricultural Societies do, through *the transactions of the State Society*.

For want of some better and assured means, if those who will be at the trouble of carbonizing some of our peat, will send specimens of the coal to us, we will appeal to a really scientific and public-spirited association, the Society in Philadelphia, "*for the development of the mineral resources of the United States*," under the Presidency of P. A. Browne, Esq.; an association, by the by, which should be patronized, and whose meetings would well reward the attention of all young farmers in the vicinity of Philadelphia. But we are trespassing on the little room that is left for the extract

from the second meeting in London on the subject. For those of the first meeting, the reader is referred back to page 337 of this number:—

"I then stated what I do now, that the fertilizing power of peat charcoal can scarcely be over-estimated. It acts upon all that the soil produces—*I except nothing:* and, to use the words of Dr. Lindley, in reply to a correspondent, (although the learned doctor was at first a doubter,) '*Use it for your onions, but it is good for every thing.*' (Hear, hear.) My own experiments have proved its value beyond a question, but I shall give you a few particulars of those made by two gentlemen of large landed property in Ireland, who, immediately after my first publication on the subject, entered into correspondence with me, and closely followed out my proposition—Henry Newton, Esq., Mount Leaster, county Carlow, and James Russell, Esq., Dunlivey House, county Donegal—and I beg to say that both were strangers to me until my publications came before them. Mr. Russell commenced his experiments in 1846. He tried it with all the usual farm produce except wheat, with uniform success, and as a top-dressing for grass land he had fully borne out all I had stated in that respect; but his trial on a field of four acres with potatoes in 1847, was very remarkable. They were planted in ridges, or, as termed here, 'lazy beds;' one-half the field manured with farm-yard manure, the other with peat charcoal only, about a handful thrown on each seed. The result was more than a double crop from the charcoal; and he informed me that he was himself so astonished at the fact, that he requested Lord Donegal to see and vouch it. At my suggestion he planted oats the next year on the whole field without any further manure, and he assured me the increase on that portion manured with charcoal was nearly in the same ratio as the potatoes. Now, what is the cause? Simply this. The charcoal lay on the land throughout the winter. Every shower of rain that came brought it ammonia and common salt in abundance. This continued for the winter months, and when spring came, every grain was rich in nutriment, while it held moisture besides, to give it to the seed at once, and stimulate it into growth. Mr. Newton was most anxious to tell you these facts himself, but he arrived in London too late for our last meeting. He brought potatoes, of which I will tell you the history. In February last he planted a large field in drills, manured as usual, not then having charcoal; but in April he got some, and, before the potatoes being earthed, he top-dressed a few yards at the foot of all the drills as far as he had charcoal. He authorizes me to state that the result was not only very nearly a double crop, but that there was not a taint in one of them, while all the rest of the field was more or less diseased. (Hear, hear.) I regret extremely that he was unable to wait for the present meeting; but he also authorizes me to say he has now a crop of Swede turnips that cannot be exceeded, to use his own expression. Yet they were not sown till June. No rain came for a month after; all the crops in his neighbourhood failed, and his were only manured with peat charcoal. In short, he has fully proved its value for all plants; like me, he excepts nothing. But I must tell you his reply to my inquiry as to his experience of its value for grass land. He said, 'Nothing can exceed it; and there is little or no labour in using it.' My friend Fenwick swears by it, and he declares he will write his name on the best grass in the country with *black* charcoal, and it will be the *greenest* part of the field in ten days."

It would be a useful item in the statistics of our States, (to collect which there should in each of them be a bureau established,) to know how much there is in each of bog or peat land, as well as in upland waste, and timber land. The estimate is 5,000,000 of acres of such land in England and Scotland, and Ireland. In our country, as in others, the space within which such land lies, convertible into peat charcoal, must be limited to the Northern States. In Southern States, where the decay of vegetation and evaporation of stagnant water are so rapid, the laws of meteorology and chemistry forbid the formation of peat bog.

The range of temperature necessary to its formation in Europe is found to be between the parallels of from 40 to 55 degrees of latitude. We respectfully appeal to our northern friends for information on this point.

To Preserve Timber from Fire.—Impregnate it with a solution of one lb. of arsenic, six lbs. of alum, and ten lbs. of potass, in forty gallons of water.—*Vernet's Patent.*

THE LATE MARYLAND STATE FAIR—AGAIN.

We had prepared a hasty review of some matters that occurred there, which, though of local origin and interest, are in their nature, or are susceptible of being made general in their application; but we have not room for them now, and, perhaps, before another month, even the little interest our remarks might possess for the public will have passed away, with things more worthy to be remembered. On the most prominent incident, the appearance there of our patriotic chief magistrate, we had remarked that it was, in the first place, especially gratifying to witness his presence, and to hear him declare, (and we honour him for our belief in the perfect sincerity of his declaration,) as to the Fair,

"It presents to me scenes and associations identical with the best interests and permanent prosperity of your distinguished State, and of our common country, and is *much more consonant to my feelings than the recollection of those military events, in which it was my lot to participate*, and to which you have been pleased to refer."

We sincerely trust, for the honour of our country and of human nature, that it may be in the power of the honest historian to say, with truth, that the American people were prompted to honour and to exalt him more for his clemency in the hour of victory, and for his abiding *love of peace*, than for his success in war, so much the result, as that unquestionably was, of his indomitable personal firmness, and of his knowledge of the men he had to command and to meet. For ourselves, we are free to declare that we would not give one good, smooth-running centre-draft plough, for all the swords that ever were stained with human gore.

What was farther admirable, on the part of the people, on this occasion, was their considerateness in not rushing upon their chief magistrate with vulgar or sycophantic importunity, but leaving him, as true politeness as well as common decency required, to pass along in quiet examination of what was most worthy of regard; coming on the ground unostentatiously as he did, not as President of the United States, much less (what, we hope, *he* would despise) as "*his Excellency*" the President of the United States; but as a gentleman planter and practical cultivator himself, wishing only to see whatever might be found most curious and valuable. So may it ever be, let the chief magistrate be of what politics or party he may.

THE ADDRESS,

By the Hon. J. A. Pearce, was eminently perspicuous and practical; crowned and ornamented with as many and as choice flowers of rhetoric as were suitable for the subject and the occasion, so that it commanded the evidently gratified attention of his many lady auditors. Himself an extensive farmer, mingling with the practice much zeal and eager watchfulness for whatever may render the pursuit more elevated in a moral, as well as more profitable in a pecuniary view; any discourse pronounced by him to such an assembly, could not fail of the best effects. We had ourselves the pleasure to *hear* enough of it to excite the hope of *seeing* it in full, and more deliberately studying and profiting by its valuable suggestions.

☞ The Society decided to overlay a resolution which had been passed, to humbly petition Congress for some of the public lands, (which are being squandered by millions of acres,) for the establishment of institutions for instruction in the art and science of Agriculture! Any amount for *military*, but not a dollar for *agricultural* schools!!!!

THE TARIFF—AND THE USE OF OXEN IN THE SOUTH.

It is not so much for its approval of our course, in the South, gratifying as we admit that to be, that we publish the following, as it is for the very *important fact it discloses* as to the capacity and adaptation of a particular breed of *oxen*, to the heavy labour, even of that climate. For ourselves, we have long believed, that man will in vain endeavour to introduce and force things upon climates and countries not adapted to them, expecting them to succeed, and improve in the characteristics they possessed in their indigenous locality. Nature must be consulted, and she may be humoured to a certain extent; but she *will not be forced.* She will make things conform to her fixed laws. The mountains will incline cattle to middle size, long hair, short legs, and active thrifty habits, and so invite the Devons, already so made to their hand. The blue grass pastures of Kentucky, and the river bottom corn lands of Ohio, call for the improved Durham, but they will degenerate unless much skill be practised in the selection of breeding stock. It will not do to breed from every thing that is calved, merely because its progenitors were costly, or of high blood; and there is the danger of constant degeneracy in our country, in breeding from the refined, artificial-made breeds of imported animals, coming from England. We find this letter, as we doubt not the reader will, of the deepest interest, and why? because it communicates *facts* and conveys information of important bearing on a topic of *very great and very general importance*—the extension of *economical ox, in lieu of horse power!* a subject to which we took the opportunity to invite the Pennsylvania farmer's particular attention on the occasion of a late address to the Bucks County Agricultural Society.

We recollect noticing particularly, and with admiration, this old Spanish stock, commonly known as the "Opelousas cattle," when we have been, where we sincerely wish we could be more and oftener, in Mississippi. They are made for the country, and the country for them. Who, after reading this letter, will continue to say "oxen cannot stand the heat of a Southern sun?" We should be proud to give the name of the writer, on account of what he says of the course of "*The Plough, the Loom, and the Anvil,*" if his letter did not seem to forbid it. Who knows but some of these days, fortunately for us, we may meet and discuss these matters toe to toe? Accident has delayed the publication of the letter until now.

Near Natchez, Sept. 15, 1849.

Dear Sir:—Please find enclosed $10 in Louisiana Bank paper, with which I desire you will credit my subscription to your valued "Plough, Loom, and Anvil." When I called upon Mr. Fallon, your agent, I found he had remitted, and that my name was not in the list sent him for collection. I find my last payment was in July 1847, of $10 to "American Farmers' Library," so that I must, ere this, have been in your debt. In future, please send my name before subscription is due, to your agent, if you regard the remittance in that way most satisfactory.*

Allow me to express my hearty concurrence in the views as regards our tariff, which your journal so ably and clearly vindicates. In common with *very many cotton planters*, I have long ardently desired to see, a powerful manufacturing interest built up in our own country, so that a great "home market" for our raw material might secure us from *the effects* of the bankruptcies, the bread-crop failures, and the political commotions of European countries. What stronger tie, too, than this, to bind these glorious States in harmony and union. That your journal may receive ample encouragement from the South as well as the North, is the wish of Your obedient servant, ———

P. S. I recently have been looking over a volume of "Memoirs of the Pennsylvania Agricultural Society," with which your name is connected as publisher, 1824. It abounds

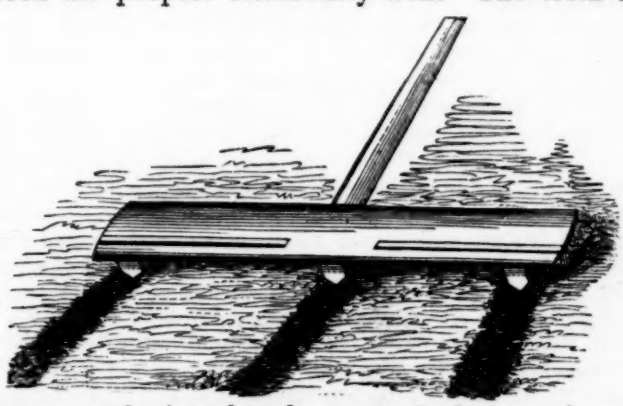
* The most satisfactory remittance, *in all cases*, is by *mail* at our risk and cost.—*Ed. P. L. & A.*

with essays and articles of interest to the farmer and planter, some of which, I modestly think, you ought to give to the readers of the "Plough, Loom, and Anvil."

My attention has been directed a good deal of late to the subject of ox-labour, and their value to the planter for the draught, even in ploughing. That they will bear, without great suffering, exposure to our hot sun in summer, I am convinced. During several summers past, I have had about fifty yoke employed in hauling cord-wood from the swamp, (upon a river plantation,) to the river's bank. The distance hauled, would average four miles to a trip, and four trips a day (sixteen miles) has been the task—the half of this distance was along an unshaded river bank, where the heat in summer is intense. Now, in several years' experience, I never knew a team of oxen, properly cared for, and suitably fed, to fail in accomplishing the above task. I had a team of large and strong mules to assist in this work when I began it; I found the mule team gained but little in time in making a trip, and never to the extent of making an additional load over the ox-teams. This was often tried, but in every instance failed. In the summer of 1847, my ox-teams hauled out four thousand cords of wood, and from early spring until fall never lost a day, (Sunday's excepted,) nor a trip that I know of, from heat or any other cause. These cattle were fed principally upon well-boiled cotton seed, or, in seasons when the corn crop was abundant, upon ground corn, or rather upon corn, cob, and shuck, which I have a mill for grinding. This latter food I found was improved by being soaked with *slightly* salted water for twenty-four hours or so, before feeding. The reason why this hauling is done in summer, is, that our swamp roads in winter are impassable for hauling, owing to the heavy and continued rain which falls in that season of the year. My oxen are all of the old Spanish stock, commonly known as the "Opelousas cattle." They are small compared with our modern Durhams, but strong, fast-gaited, raw-boned, (they never fatten well,) and having large wide horns; a judicious crossing with the wild herds of Texas would no doubt give larger size and strength to the common draught ox of this country, and give us an animal suitable for ploughing even in summer. I mention these facts to you, as I see you are calling attention to the draught ox, and what I have thus hastily written is not with a view of seeing my name in print, (which I beg you will omit,) but to give you facts which you may rely upon, hoping they would not be uninteresting to you. With great regard, I am again, yours, &c.

NEW DRILLING MACHINE.

HAVING in vain attempted to procure an instrument to supersede the old plan of making drills with the line and hoe, I constructed, this spring, a rough machine, something after the fashion of the accompanying model, which answered the purpose remarkably well. The teeth may be made



movable, or more may be introduced, as required; at each end there is a guide to run out for marking the distance from the last drill. It is weighted at the top, and drawn along the ground by a man, followed by two or three children, dropping into the ground either beans, peas, parsnip, carrot or turnip seed. The drills are filled in with a rake. Two men and two or three handy children may sow an acre per diem, at a cost of five or six shillings. It can be made of either iron or wood.—*Falcon.*

ON THE PECULIAR AGRICULTURAL CIRCUMSTANCES OF THE UNITED STATES,

AND THE POLICY THEY ENJOIN.

THERE are some men whose minds are like great stagnant pools without any living spring. They have both disposition and capacity to amuse the vulgar, with endless volubility of speech, and with such, to pass themselves off for prodigies of knowledge; and yet, when you come to set away, to settle, all they have said, like still-fed cow's milk, you can neither skim nor drain from the effete mass any thing really new or substantial, much less any thing rich. There are, on the other hand, some whose minds seem to be of an ore, so pure and exempt from all rubbish and alloy, that whenever you touch them, they ring like the purest metal, and in all they say you can detect nothing confused or superfluous—all is to the point—all is useful as well as original. Such is the character of whatever reaches the public from such men as *Calhoun* and *Webster;* such, we should judge from what we have seen of his writings, is the character of the mind, the acquirements, the course of research, and turn of thinking of *Lieutenant Maury* of the Navy. In keeping with whatever else we have seen from him, was his speech at the late Memphis Convention, from which we have room only for the following extract, selected because it has a direct and important bearing on the *agricultural capabilities and policy of the United States.*

Let us for a moment consider the commercial advantages which we derive from the course of our rivers, and from the geographical position of that wonderful ocean basin which is composed of the Gulf of Mexico and the Caribbean sea. They are in truth the Mediterranean of the New World. A river which runs north or south crosses parallels of latitude, and consequently passes through various climates; therefore a variety of productions is to be found along its banks, and assortments of produce are delivered at its mouth to be borne across the ocean by the wings of commerce. The Mississippi river crosses more parallels of latitude than any river in the world, and therefore we find in its valley a greater variety of agricultural staples than on the banks of any other river. We have wheat and corn, hemp and tobacco, provisions, cotton, sugar and rice, with a vast variety of articles of minor importance.

A river which runs east or west crosses no parallels of latitude: the same climate which exists at its mouth is found at its source, and there is no variety of agricultural productions along its banks. In this fact we see one of the great sources of commerce and wealth afforded by the Mississippi river. A sea, commercially speaking, is important in proportion to the extent and climate of the back country by which it is drained, and in this point of view there is no part of the wide ocean which is comparable to this Mediterranean sea in our midst. It is midway between North and South America; rivers that run from the northern and southern hemisphere empty into it; in their course they cross *seventy degrees of latitude, and embrace all the agricultural climates of the world.* The back country drained by these rivers is greater in extent than all the back country that is drained into the Mediterranean of the Old World, added to all the country which is drained from Europe into the Atlantic, and all that is drained from India into the Indian ocean. There their rivers are all in the same hemisphere, and they have but one harvest during the year; here our rivers rise in both hemispheres, and we may have a harvest every six months. There they have to sail twenty thousand miles to exchange the products of one river basin for those of another in a different climate; here we can do it within a distance of two thousand miles. There it is as much as a ship can do to make one voyage in a year between their remote river basins; in the same time here one ship may make ten voyages between our remote river basins.

What is it that has caused the nations of Europe to attach so much value and importance to the commerce of the Indies? It is because the river basins there lie in latitudes which are not found in Europe, and which therefore supply commerce with staples that

are not produced there. All the supplies that are to be found in the river basins of Europe and of India, with the exception of mere spices, abound in far greater profusion in the magnificent system of the New World. As before stated, this Mediterranean sea is midway between the two Americas. Only give us, therefore, a commercial highway across the isthmus, and we make it the commercial centre of the earth. It will then stand midway between Europe and Asia.

Now can any man contemplate the facts here stated, without at once perceiving, that as our resources are so much more various and abundant than those of any other country on earth, yielding all the elements of independence and of prosperous "free trade" within ourselves, that therefore our policy should be correspondingly peculiar? Rivers empty into the Mississippi that cross seventy degrees of latitude, embracing all the agricultural elements of the world, "therefore a variety of productions is to be found along its banks, and assortments of produce to be delivered at its mouth, to be borne across the ocean by the wings of commerce!" Yes, but in what state and for what purpose are these raw productions to be borne across the ocean? To be fashioned into ten thousand forms by 100,000,000 of steam horses in England, the profit on the manufacture adding hundreds of millions annually to the wealth of English aristocracy; and having performed that office, to be sent back to us, and to all parts of the world, with their accumulated cost of double transportation to the American consumer? Why not do all that fashioning of the raw material, to the very last touch of art, and keep the profit of fashioning as well as of producing to ourselves? How long will the plain common sense of the cultivators of the soil be humbugged by office-seeking and office-jobbing politicians! Are the people of the United States mere swine, before whom God has thrown these pearls? Verily it looks too much like it!

HEREFORD CATTLE—SHORT HORNS AND DEVONS.

Is it that the Herefords imported into the United States, first we believe by Mr. Clay, and since in larger numbers, if not great perfection, by Mr. Corning of Albany, have passed into so few hands, and they so little in the way of puffing their wares, or how is it, that we see so little said of them? In England they make a strong and persevering stand against the other breeds.

In a late number of the English Farmers' Magazine, we find the following bold challenge from the Hereford to the Short Horns and Devons. Come, gentlemen American owners of this beautiful breed of cattle, back up Mr. Smythies, and don't allow yourselves to be *cowed*.

I hereby offer to show four Hereford steers, whose ages shall not exceed two years and three months, and four whose ages shall not exceed one year and three months, at the next Smithfield show in December, against eight shorthorns and eight Devons, of similar ages, for a sweepstakes of one hundred sovereigns for each lot; with this stipulation—that each lot shall have been bred by one man, and that they shall have lain at grass at least four months this summer, without having had any thing but what they got there. As Mr. Keary has asserted in his *Prize Essay* that it takes ten months longer to make up a Hereford than it does a Short Horn, I must labour under a great disadvantage; however, I will take my chance for that. I think, sir, I have a right to expect that this challenge shall be accepted, or that we shall hear of no more *Prize Essays*, containing such unfounded and calumnious assertions. But this is not all. I am willing to test their hardiness

as a breeding stock, as well as their feeding properties. In order to do this, I propose to turn my two-year-old heifer, which gained the first prize at Norwich, into a pasture with the two-year-old Short-horn and two-year-old Devon heifer, which obtained the first prize in their respective classes, and let them remain there till the next meeting of the Royal English Agricultural Society at Exeter, next July, giving them nothing but what they can get, except a little hay from the 5th of November till the 5th of May; the heifers to be shown at Exeter for a sweepstakes of a hundred sovereigns each. But in case the owners of either of the heifers should object to the amount of the stake, I am ready to show them for nothing, if the society will consent to give a cup to the winner; and I do not know how they could lay out their money better, for this is a question of the utmost importance, and one that ought to be decided as early as possible, and can only be settled by the animals being brought into close contact in the way I propose. If any Short-horn or Devon breeder can point out a fairer way of testing their respective merits than the one I have proposed, I shall be ready to meet him in any way he likes. I am not nice to a shade how the experiment is tried, so that the animals are brought fairly into competition with each other. I hereby declare that I am ready at all times to produce Hereford beasts against any other breed in the United Kingdom, either as rearing or feeding stock, and to back my opinion. I suppose, after having seen Mr. Hobb's cow and my heifer at Norwich, Mr. Keary will allow that there are such things as *gray* Herefords, though he did not happen to know it before.

Before I conclude, I must beg to give a word of advice to my brother graziers. If they are desirous of trying Hereford bullocks, let them go down to Hereford fair, on the 19th of October, when they will see the finest show of bullocks the world can produce, and there they can choose for themselves, and not trust to buying them of jobbers, who buy a cheap sort, chiefly bred in Radnorshire, out of Welsh cows, and bring them up into the country where the breed is little known; and by this means they are led to form an unfavourable and unjust opinion of the breed, probably never having seen a good-bred one in their lives. My only object, Mr. Editor, is to establish the truth, and to show to the farmers of England what is their real interest,

I remain, your obedient servant,

J. R. SMYTHIES.

East Hill, Colchester, September 18

Bones and Acid.—To those who dissolve bones in sulphuric acid, I beg to communicate a method I have now, for the second season, adopted with success, whereby I make very short work of an otherwise troublesome job. Under cover, either in a manure barn or cart shed, I make a clay basin or trough, 20 feet by 10, with edges 20 inches wide and as high, into which, having previously thrown 100 bushels of half-inch bones, and having damped them, I pour from the carboys 1700 lbs. of acid: the contents of each carboy being marked by the maker, I have not the trouble of weighing. As soon as the requisite quantity of acid is poured into the trough, two men with common iron road scrapers or long iron rakes, commence stirring, continuing so to do until effervescence subsides, two hours completing the work. I leave the mass for 10 days, when, by the addition of sufficient water, I bring the whole to the consistence of a thick gruel, cinder dust being then added as usual. W. S.

THE AMERICAN INSTITUTE.

WITH this establishment, except in its agricultural pretensions, we have no concern. In that relation, it would be easy to show it up as boasting more, and making more parade, and doing less, managed as it has been, than any public institution of its means in the world.

The fact is, the Legislature ought, and we believe will *excuse* it, from all connection with the *agricultural* interest of the State. If New York county has, as an *agricultural* district, claims on the patronage of the State, as we doubt not it has, let it have an Agricultural Society of its own, be placed upon the *footing of other Agricultural Societies*, and ranged under the State Society, as all the other counties are. What have these old gentlemen of the city, who find an agreeable lounge in the Institute, to do with the agricultural interests of the State? How much has its agriculture been put forward by translations "by him," from outlandish tongues and countries? Let a society of *bona fide* farmers of the county of New York be formed as in other counties, and practical men put at the head, and in the body, and at the tail of it, and let what there is of *pith and marrow* in their proceedings be extracted and incorporated in the transactions of the State Agricultural Society, and let the Institute give its "*Trans.*" and its "*Dips.*" to those who can be so paid for helping them to get up, every year, a new show of old trumpery. Of their management of the Institute, in its legitimate sphere, the encouragement of the *useful* arts, and to accelerate and illustrate the progress of *useful domestic industry*, the reader may gain an idea by perusal of the following, from a paper of deserved circulation and influence, on the spot, in which, we believe, it speaks the sentiments of the New York public, if they could find utterance—so far as the public cares any thing about the Institute—*managed as it has been*, which we certainly do not, except that it is, as far as agriculture is in the question, grievous and deplorable to see so much means without utility, and so much pretensions without merit.

[From the New York Dry Goods Reporter.]

The American Institute.—We are very glad to perceive that our notices of the Annual Fair of this institution have been extensively copied and universally commended; not because of the compliment to ourselves, but because it shows the general interest which is felt in what should be the principal object of the exhibition—the encouragement of home progress in the useful arts. The more we reflect upon the meagre show of the most important fabrics, and the trifling consideration bestowed upon those plain, useful productions which were exhibited, the more strongly are we convinced that some reform in the management of this institution is absolutely essential to its prosperity. It made our cheeks crimson with shame, to see the triumphant glances bestowed by some foreigners upon the dry goods portion of the exhibition. After all that has been said of the progress of American manufactures, to see so few mills represented at this Fair must have been painful to all who have the interest of the country at heart. We could not at first account for it, and were disposed to condemn the want of spirit on the part of the producers. But when we saw the treatment which those fabrics which were presented received of the committee; when we saw meritorious articles passed by with slight commendation, or entirely overlooked, simply because they were the every-day productions of a mill employed upon the useful rather than the ornamental, we were no longer surprised at the backwardness of exhibitors. There is a story going the rounds of all the papers, of a little boy, in his first visit to church, who clambered upon the back of the pew the moment the organist commenced playing, and, when urged to sit down, cried out, to the great annoyance of his mother, that *he would not, he wanted to see the monkey!* His sole pleasant association with the organ was connected with the street exhibitions, and he did not care for the music. The managers of this Institute, thinking perhaps that children of a larger growth might have the same propensity for sight-seeing, have made the monkey part of

their exhibition more and more prominent every year, until mere *show* seems to be the paramount object of their Annual Fair. The question is not so much one of merit as one of display, and thus the plain, the simple, and the useful have been thrown into the shade by a child's dress glittering with fancy thread and gold lace, and a piece of cotton cloth has no chance beside a tinselled doll in a gilded case.

WOOL DEPOT IN BALTIMORE.

Baltimore, 11 *mo.* 2*d*, 1849.

Respected Friend, J. S. Skinner,—On my return to the warehouse, I found thy letter, requesting my opinion on wool, &c. As far as my observations have extended, I feel willing so to do, and may notice thy remarks on my establishment are correct. The crop of sugar at first gathered but few flies; but I found every succeeding year has increased their number; and I hope, by strict attention to that branch of business, and at all times will give a fair price, to offer every inducement to the wool-growers of the South to make Baltimore and my particular location a desirable depot for the produce of their flocks; it will save them considerable expense and trouble they have necessarily incurred in going north.

Our farmers must be protected by a law against dogs, or their labours will prove unavailing. I hope it will claim more of the agriculturists' attention, to petition the Legislature; and if they could succeed in getting a law passed, like one they have in Pa., it would be one of the first steps for their encouragement.

We may consider Maryland one of the Southern States, and my opinion is, she has many advantages of turning to good account, for the profitable raising of that commodity; many fine streams on which factories could be erected to work it all up. Bringing together the plough, loom, and anvil, would greatly enhance the prosperity of our State.

My letter, at this time, will be brief; but, some future period, intend giving thee my views as to other questions.

Remain thy friend, James Baynes.

We rejoice, let us repeat, at every, even the smallest sign favourable to the enjoyment, by the Southern States, of a great resource in their wool-growing capabilities, from which nothing cuts them off but that supineness which no other industrial class on earth would permit to stand in the way of such a great and certain means of prosperity. Maryland ought to realize from sheep husbandry an addition to her present income of at least $100,000 annually, clear of all expenses—and other Southern States in proportion. There is this to be said for it—that its prosecution would involve no or very little diminution of the area appropriated to grain and cotton culture. And then what business needs so little capital to commence upon, or so little of additional capital for its conduct and management, as sheep husbandry?

Why don't agricultural societies in the South arrange some of their premiums to promote care and skill in *shearing sheep*, and in the washing and management of the flocks and the fleeces? It would, in fact, be highly useful to get up associations *expressly* to extend and improve the sheep husbandry of those regions. There is tact even in rolling up a fleece, which manufacturers understand, and much additional value to be imparted to the clip by a little attention and knowledge on the part of the flock-master, as every farmer might see and learn in thirty minutes' time, were he to go and see the many poor people at work, as we did with pleasure, in Mr. Baynes's establishment. We say with pleasure, because it was gratifying to see that good may come even out of evil, as here poor, infirm men, and otherwise helpless women, derived support from the slovenly management of lazy or indifferent sheep-owners.

NEW JERSEY TARIFF CONVENTION.

The New Jersey Tariff Convention convened at Trenton on Wednesday, and was called to order by Col. Joseph Jackson, probably the oldest living manufacturer of iron in the State, possibly in the Union, and on his nomination, Peter Cooper, Esq., of Trenton, was called to the chair, and Messrs. Joseph Jackson, of Morris, William P. Robson, of Warren, and Thomas H. Richards of Burlington, were appointed Vice-Presidents, and Messrs. Wm. Green, Jr., of Morris, and Abm. S. Hewitt, of Trenton, Secretaries. A committee on resolutions was then appointed, consisting of Messrs. Edwin Post, of Sussex, Wm. Green, Jr., of Morris, Peter M. Ryerson, of Passaic, Thomas H. Richards, of Burlington, Charles Scranton, of Warren, and Abraham S. Hewitt, of Mercer. The Convention then took a recess, after which the following resolutions were reported by Mr. Post, and after some discussion, in which Messrs. Cooper, Hewitt, Jackson, and Perdicaris participated, they were unanimously adopted, viz.:

Resolved, That it is the deliberate sense of this convention, composed of men *of all parties and from all sections of the State*,* that the tariff of 1846 has now had a fair trial, and that while some of its features are unobjectionable, its operation has been very injurious to all the great manufacturing interests of the State; and the agricultural classes, in the absence of European famine, have found the uncertain foreign demand a most meagre substitute for the steady cash market at home.

— That the next Congress of the United States will be called upon to decide a question of great magnitude to New Jersey; whether the tariff shall be modified in some of its most objectionable features, or whether the manufactories of this State shall remain closed, and the most serious injury be done to all its branches of protective industry.

— Therefore, that it is the solemn and paramount duty of the members of Congress from this State to urge, as the united voice of New Jersey, such modifications of the tariff as shall again put our machinery in motion, and afford full and profitable employment to the operatives who are now idle, and a home market for the surplus produce of the farmer.

— That we do not recommend an indiscriminate and hasty repeal of the tariff of 1846, but that our members of Congress are as much bound to contend for such of its provisions as may have been found to operate advantageously, as against those which have paralyzed the strong arm of labour.

— That we do not ask for such duties as shall prohibit the introduction of foreign merchandise—but such rates merely as will enable us to enter into fair competition with foreign manufacturers, without reducing the wages of our operatives to the European standard; and that we are then ready for the contest between American industry, skill, and enterprise, based upon well paid, intelligent labour, against superior European capital, working with half-fed and half-clothed operatives, ignorant of the true value of their toil, because they have never received its just reward.

— That a committee of correspondence, consisting of five members, be appointed by the chair, whose duty it shall be to issue an address to the people of the State, setting forth clearly the issue between the modification of the tariff, and the permanent suspension of our manufacturing establish-

* As a politician, Mr. Cooper is a decided Democrat; yet for joining him and Democratic Governor Mahlon Dickenson, and James Buchanan, and Louis McLane, and others, in advocating protection of *American labour*, touching on politics in *no* other way, this journal is denounced as being "*horribly Whiggish*" forsooth!

ments—with power to add to their number for the purpose of circulating petitions, praying Congress for suitable immediate action in the premises; for collecting information and statistics in regard to the industrial interests of the State; and that they cause the same to be laid before Congress at the earliest practicable period, at its next session.

—That Wm. P. Robeson, Adam Lee, Peter Cooper, and Edwin Post, be appointed delegates on behalf of the State of New Jersey, to attend the Tariff Convention, to be held at Pittsburgh, on the 21st inst., and that they have power to add to their number, and appoint substitutes in case of their inability to attend.

These resolutions, says the *Newark Advertiser*, fairly express the prevailing feeling in New Jersey on the subject. The fifth comprehends the truth in relation to it, as it is held by the friends of home industry here and throughout the country; and we are glad to add that the convention adopted further measures to promote the cause, by the appointment of a committee of correspondence, consisting of Messrs. Post, Richards, Green, Hewitt, and Travers. Complaints of the operation of the tariff as it now stands are raised in nearly every part of the country, and from the producing classes of nearly every description. Our readers are already but too familiar with its deadly effects upon the iron interest; and one who claims to be the oldest living manufacturer of woollens in the United States—having conducted the business at Bloomfield from 1812 to 1825, and since in New England—writes that during the whole of this period of near forty years, he has witnessed no such fluctuations in the trade as have occurred within the last three, or since the introduction of the tariff of 1846. We have assurances from Washington that the whole subject will be fairly brought before Congress by the Cabinet, and the people should corroborate its efforts to produce the all-important revision of this wretched system of revenue.

EXHIBITION OF THE INDUSTRY OF ALL NATIONS.

Prince Albert, who is President of the Society of Arts, has originated a plan for a grand exhibition of the Industry of all nations at London, in the year 1851, which has been generally approved throughout the empire, and is now open for discussion throughout the world. The object has been stated by some to be simply to show the English nation how much the arts and manufactures of that country have improved, and how well they are able to stand in competition with the productions of other parts of the world; but this narrow ground has been abandoned, and the object now presented is to direct the minds of the whole world to the peaceful pursuits of industry, and by friendly competition and generous rewards to cement more closely than ever the amicable relations of all the nations of the earth. It is proposed that the collection and exhibition shall consist of raw materials, machinery and mechanical inventions, manufactures, sculpture, and the plastic art generally. It is not intended to be an assemblage of ordinary productions, but of the very best works, in all these classes, which the world can show. There are some "Yankee notions" in the way of improved machinery, which it might limber the neck of John Bull to look at; and there are manufactured fabrics produced on this side of the water, albeit our nation is in its childhood, which even our grandsire on the other side might pronounce "pretty well done for a boy!" Success, then, to the effort.

ON THE MOST ADVANTAGEOUS FORM FOR COMMON WOODEN FIELD-GATES,

WITH A VIEW OF DETERMINING THAT WHICH WILL BEST ENSURE LIGHTNESS, STRENGTH, CHEAPNESS, AND DURABILITY.

By George Buist, Esq., Bombay.

In conducting some inquiries on the subject of agricultural mechanics, especially in those implements of more simple form, where the application of the principles of abstract theory were unlikely to receive any modification or to require any correction from incidents in the course of their operations, I became surprised with the varieties in the forms of our field-gates, differing widely from each other, and deviating, as it appeared to me in many cases, from the statical laws by which the mechanic ought in all cases to be guided. On a diligent and careful inquiry at the most intelligent and well-informed workmen as to the principle of construction pursued by them, it did appear to me that, on this subject, they gave heed to no principle whatever; that each adopted the form which his own fancy suggested or the caprice of his employer pointed out.

To test the accuracy of the last of these assumptions, I have for a long period been in the habit of making drawings of gates of every variety, or notes in reference to such as differed slightly, if at all, from those already drawn, and I may venture to state, that I have not found one in fifty which did not, in some one quarter or another, do violence to the first principles of mechanics; as, indeed, the reason is very obvious, when it is considered that they consist of many parts, for the proper collocation of each of which a very uniform and rigid rule obtains, and that yet of all these rules, or indeed of their very existence, many of our ordinary workmen are yet in a state of ignorance.

Sweeping as this charge may at first sight appear to be, I shall have no hesitation, after the result of the rules just about to be laid down shall have been compared with the facts, to leave it to any one, who shall have compared them together, to pronounce whether it be too much so.

Importance of Lightness in Gates.—It is singular, considering the magnitude of its importance, quite irrespective of the cost and waste of material occasioned by it, how often and how utterly the inexpediency of excessive weight in gates is disregarded. Yet to this cause mainly, when otherwise the structure of gates approach any thing like accuracy, are we to ascribe the speedy distortions they so frequently attain. Not only is a heavy gate a perpetual and incessant strain on the hinges, crooks, pillars, or walls which support it, but it tends to its own destruction from the weight of the materials of which it is formed. A heavy gate shut suddenly has the velocity of its mass so instantaneously arrested when checked by its bolt, that it tends to shake itself to pieces, and every joint and tie suffers an unnecessary strain. How speedily does the bolt of such a gate lose its proper place along with its efficiency for service? How soon and how clumsily does its forefoot drag along the ground? Its pillars droop, its hinges are twisted—the elements of self-destruction are in itself.

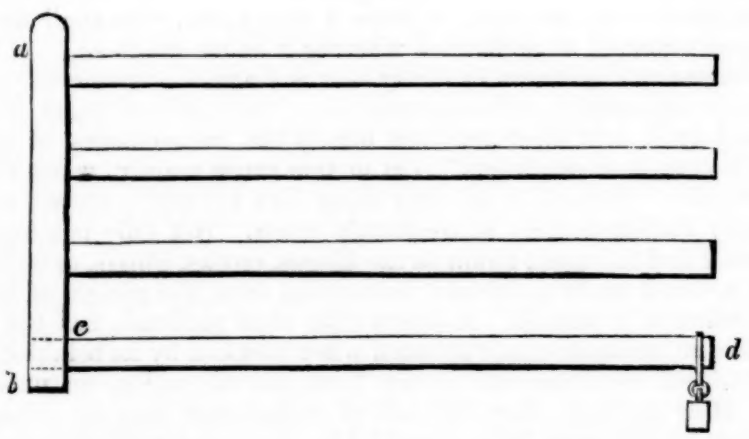
Jointing Wooden or Iron Gates.—There is not a more fertile source of malformation in gates, than inattention to the modes in which the different varieties of material from which they are made should be put together. A wooden diagonal, made to connect two portions of a gate together in the

manner of a tie, so as to sustain a pulling strain, must either be notched in, dovetailed, tennoned with a pin or wedge, or nailed, or bolted. In the case of its being notched, it is cut away till the notched portion has only half the substance of the material left to perform its office. Should it be dovetailed or mortised, matters are still worse, as in this case it not only is stripped of more than one half of its own strength, but requires one half of the transverse beam to be cut away from it. Nails or bolting are alike faulty, as the whole support is then reduced to the strength of the nail or bolt bearing a cross strain, or to the cohesion of the woody fibres lying between the nails and the end of the tie. To any one who considers the matter, the impossibility of jointing wood in such a manner as to make it thoroughly resist the pulling strain without yielding, will appear a matter which requires no demonstration. If wood is to be used as a bracing agent in such a construction, it must be applied as a *strut*, and, if possible, its entire cross section should be brought to bear in the thrust.

In the case of iron, as applicable to ties, the converse of all this holds true. Iron can be welded into a hasp or clamp, headed up like a bolt, screwed, twisted, or fashioned with very little extra cost, and without diminution either in its own strength or the strength of the rails, or the heel or head-post to which it may be attached. Malleable iron is, however, unfit for a strut, because unless made very heavy, it easily bends with a thrust, though it will safely and easily stand a pull of twenty tons for every square inch of its transverse section. The maxim, then, for the diagonals of all gates is, "*Stay with iron, strut with wood.*"

Stiffening of Simple Gates generally.—By dilating much on the abstract doctrines referring to this point, would incur the risk of going twice over ground, which it will be necessary at any rate to traverse in explaining in detail the faults of the gates of which I am about to give examples, and the best mode of remedying them. Cross strains are those least capable of being resisted by any material of which gates can be made, and these cross strains are still more apt to prove destructive when applied to a lever of advantage. If, for example, *a b*, Fig 1, be the heel-post of a gate, and *d c*

Fig. 1.

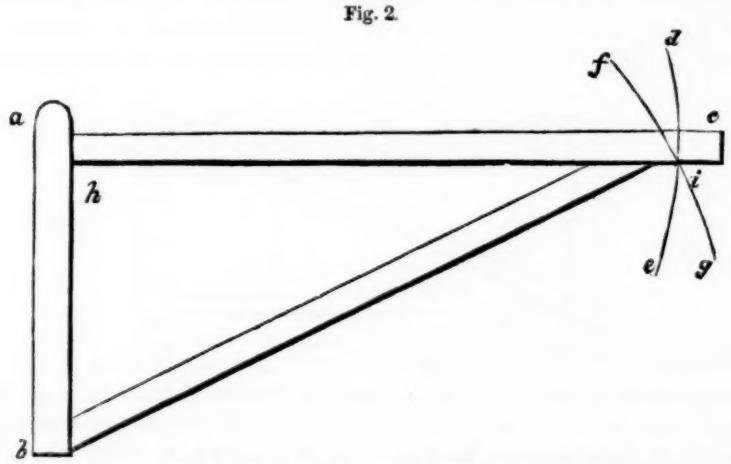


one of its rails, nine feet long, the mortised part at *c* being six inches; then if a weight of one pound be suspended at *d*, it would tend to break *d b* across at *c* with a force of eighteen pounds, the one arm of the lever of which *c* is the fulcrum being to the other as eighteen to one.

A gate, therefore, not properly fitted with a diagonal strut or stay, is of the weakest possible form, and very shortly, whatever be the material of

which it may be made, or however it may be situated, tends to droop at the forefoot and assume a lozenge form. The following may explain the rationale of a diagonal action:—Let *a b*, Fig. 2, be the heel-post of a gate as before,

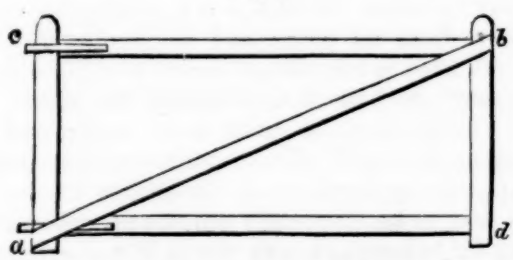
Fig. 2.



a c the upper rail, and *b c* the diagonal. Were *a c* left unsupported, then it would tend to describe the arc *d e*, and to bend at *h*. Were *b c* in like manner left unsupported, it would tend to describe the arc *f g*. Now these arcs intersect each other at the point *i*; but if the arms which describe them be at that point made fast, then no further traverse on the part of either will be permitted. A weight suspended at the point *c* would no longer create a revolving motion on the part of either arm, but would tend to turn round the whole machine, to pull out *c a* and thrust in *b c*. But this is exactly what is desired, because the greatest strain which can be borne is by the material meant to sustain it being exposed either to a thrust or pull. We have just said that, in the case of a strut, such as that afforded by *b c*, *a c* is pulled and *b c* thrust in. This tends to compact the ends of the diagonal into its mortice, but in the same manner, and to the same extent, tends to pull the gate to pieces. A stay or diagonal, sustaining a pull, is then, irrespective of all other considerations, to be preferred to a strut, as the one tends to compact and keep together, the other to separate the gate. Hence the great advantage of applying light rods of iron in the form of stays or ties in all such structures as gates.

Fig. 3 is an illustration of one of the most frequent malformations of the common wooden gate, whose structure at first sight seems to be quite accurate, and does in reality approach very near to accuracy.

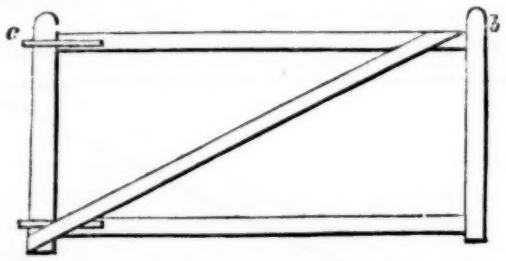
Fig. 3.



This gate, Fig. 3, is represented with the upper and lower bars only: *a c* is the hinge-end or heel-post; the diagonal *a b* ascends from it as a strut; but then, instead of being inserted at its upper termination in the top-rail, and so drawing against the clamp of the hinge *c*, which binds the top-rail and heel-post together, and which nothing could remove, it thrusts

Fig. 4.

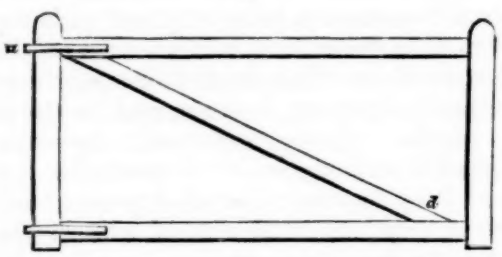
against the head-post at *b*, where there is no resistance except the mortise; and, consequently, the gate when strained tends to droop by the pushing of the head-post outwards, and a rupture of the mortise ensues. The remedy is simply to fasten the strut by tennon, dovetail, or notch—the last being much the best—to the top-rail *c b*, as in Fig. 4; it then pulls the bar



in the direction of its fibres, and strains upon the iron clamp of the hinge at *c*, which cannot give way. To facilitate this mode of fastening at the upper end, it is of very small moment that the diagonal be deeply notched at the points where it crosses the horizontal rails; because, if this be done correctly, the portions cut away are perfectly supplied by the horizontal rails on which the ends of the diminished diagonals abut. On no account should the horizontal rails themselves be cut or notched, because nothing can come in to supply the portions which have been removed from them; and they are just weakened throughout in proportion to the magnitude of the part cut away.

Fig. 5 is an example of a wooden gate, with a wooden diagonal *a d* applied as a tie.

Fig. 5.

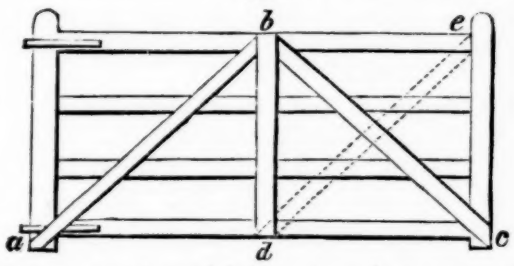


A gate so constructed will speedily droop at the forefoot, and become lozenge-shaped. This is not in the present, as in the former example, however, occasioned by the joints of the horizontal rails suffering from dislocation, but from the imperfection of the joining of the diagonal itself, of whatever nature that may be when the strain is a *pulling* one—permitting it to be readily withdrawn from its place, and so ceasing to give the gate the requisite support. There is no proper remedy or corrective for this: the wooden *stay* diagonal *must be thrown aside*, and either a wooden *strut* diagonal substituted in its place, or, what is far better, and supplies us with one of the most inexpensive and efficient plain gates we can obtain—a light iron diagonal tie applied in the place of the former to the common wooden gate. This begins now to be frequently employed, especially on fences and enclosures required for railways, where the skill and science of the engineer watches over and directs the operations of the mechanic. The iron need not be more than half-inch in diameter. It can be easily and efficiently adapted to any form of gate. It forms a cheap, thoroughly efficient, and perfectly indestructible stay, and ought on every ordinary occasion to take the place of all others whatsoever. An iron diagonal stay can also be

applied at any time to a gate of any form in almost any stage of decay or deformity: if clasped around its forefoot, or fastened with a rivet-head and clamp to protect the wood, and then brought up to the upper hinge end, and drawn tight with a nut and screw, it will furnish a cheap and easy remedy for any extent of deformity short of absolute fracture.

It would be endless to attempt to describe every variety of absurdity to

Fig. 6.



be met with in the construction of field-gates; but one or two cases may be given as types of the whole.

The first of these, Fig. 6, is in the shape of the common flake or hurdle; and for this it is particularly well adapted, because the flake being equally well supported at both ends, *a b* and *b c* act as struts abutting at *a* and *c*; but respectively, the conditions of a gate which hangs from one end, and is at the other wholly unsupported, is totally different. In this case *a b* acts as a strut to the heel half of the gate, and so may be all well enough, but for the difficulty already pointed out in the first example of making a secure joint at *b*. In the second half of the gate, on the other hand, *b c* acts as a tie, and underlies all the objections before mentioned as applicable to ties of wood.

Another form is to be found wherein the tie *b c*, Fig. 6, is removed and placed in the position of the dotted lines *d e*, which affords an example rather of negative than positive disadvantages. The gate, without any reason, is divided into two separate parts, each having a strut-diagonal, and each diagonal requiring the same jointing, being open to the same dislocations as those incident to the single one; so that a gate of this form is at once considerably more weak, and decidedly less durable, but more expensive, than one of the simply strutted sort exemplified in the first case laid down.

The above remarks may be held as sufficiently copious for the illustration of the doctrines meant to be explained in reference to ordinary wooden gates.

Exports of Breadstuffs.—The aggregate exportation of breadstuffs from the United States to Great Britain and Ireland, up to the latest dates this year, compared with the corresponding period last year, has been as annexed:—

To latest dates.	1848.	1849.	*Decrease.*	1849.
Flour, bbls. . . .	320,513	83,491 . . .		237,027
Corn meal, bbls. . .	18,778	960 . . .		17,818
Wheat, bushels . .	479,501	163,588 . . .		315,913
Indian corn, bushels .	2,918,454	422,077 . .		2,496,377

At this rate, we shall find outlets for but a small per cent. of the supplies of our agricultural products this year. The supply of breadstuffs in Europe is above an average, and if the potato crop proves healthy and abundant, the demand upon us will be very limited.—*Phil. Daily News.*

THE NEW YORK DRY GOODS REPORTER.

THERE is, assuredly, something in the education and habits of a large-town Editor that seems not only to quicken but to multiply their faculties; or how otherwise could they possibly collect and throw out upon the public such an immense wall of items and facts, to enlighten and profit every conceivable branch of art and industry as they do? Look at this "Dry Goods Reporter," and you would suppose the Editor, Mr. Burroughs, to possess the eyes of Argus and the arms of Briareus. As the smallest possible return for what we shall owe, every month, to him, and to our old friend Lyford, at Baltimore, we copy their TITLES and TERMS.

The Dry Goods Reporter and Merchants' Gazette.—Published every Saturday, by W. Burroughs, Jr., No. 44, William street, opposite the Merchants' Exchange. Terms: $3 per year, in advance. Terms of advertising:—Ten lines or less, each insertion, $1. For one month, $4. Yearly advertisers, not exceeding twenty lines, with privilege of changing at pleasure, $40.

Baltimore Weekly Commercial Journal, and Lyford's Price-Current,—is published every Saturday morning, at No. 117, Baltimore street, near South, by W. G. Lyford, editor and proprietor. Terms:—*Five dollars* per annum; *two dollars and fifty cents* for six months, payable in advance. Twelve and a half cents, for a single sheet.

A failure to notify the Editor to discontinue previous to, or at the end of a subscriber's year, will be considered as a new engagement for another year.

Advertisements of a square, (sixteen printed lines, or a less number constituting it,) will be inserted three weeks for a dollar. For a longer period, upon such terms as may agreed.

Printed by Jos. Robinson, Book and Job Printer, No. 117, Baltimore street.

BARTLETT'S DOUBLE PLOUGH.

[From the Boston Courier.]

BEING at Worcester a few days ago, I was invited to examine the *Double Plough*, recently patented by W. O. Bartlett, Esq., of that city, and to see its operation. It is a very simple machine; it is, in fact, two single ploughs yoked together, and, like a well-trained yoke of oxen that will do their work without a driver, seems as if endowed with sufficient intelligence to perform its office without much labour on the part of the ploughman. The machinery by which the two ploughs are connected is so contrived that they accommodate themselves to the ground. I never saw a more beautiful agricultural operation. It was in a field where corn had been raised the past summer, and which, though not stony, had rather a diversified surface of plain and valley. The plough was drawn by a single team of oxen, attended by one man, whose attention seemed to be necessary only when he came to the end of his furrow, to turn the plough into its proper position for another. He walked generally by the side of his team. The man, the team, and the plough seemed to be so many parts of a well-adjusted self-moving machine, that only required *winding up* to keep it in constant motion. If any one should have occasion or inclination to write a lecture on the poetry of husbandry, let him first go to Mr. Bartlett's farm, where he may get inspiration from the double plough, and learn wisdom from various improvements which are there in progress.

I think that no one who has seen the operation of this plough can for a moment doubt its superiority over every other instrument that has ever been

invented for tilling the ground. On some soils it may require more draught than the common single plough, (though I am not certain of *that*,) but if it should, this requirement is immensely overbalanced by the amount of work performed. It requires no uncommon sagacity in a farmer to perceive that he is, in all respects, a gainer, when he can perform in a single day the labour that had formerly occupied two or three. There is no doubt that a good team, either oxen or horses, would plough four acres in a day with this simple machine, and the ploughman would have the pleasure of seeing, at its close, his field with a new surface, beautifully turned up in furrows of uniform width and depth, and in parallel lines, almost as straight as if drawn by a strict mathematical process. J. T. B.

We take the above from "The National Intelligencer." There is a *treble* plough getting into use and popularity on the Eastern Shore of Maryland, for putting in wheat especially, that is obviously worthy of patronage as a labour-saving implement. They are arranged on eschalon fashion.

This invention or improvement has been ascribed to the late *Virgil Maxcy;* but we have seen, in an old Walker's Hibernian Magazine, an account of such a plough, or one on the same principle, more than sixty years ago. The list of new things would indeed be much abridged, if we could go back far enough.

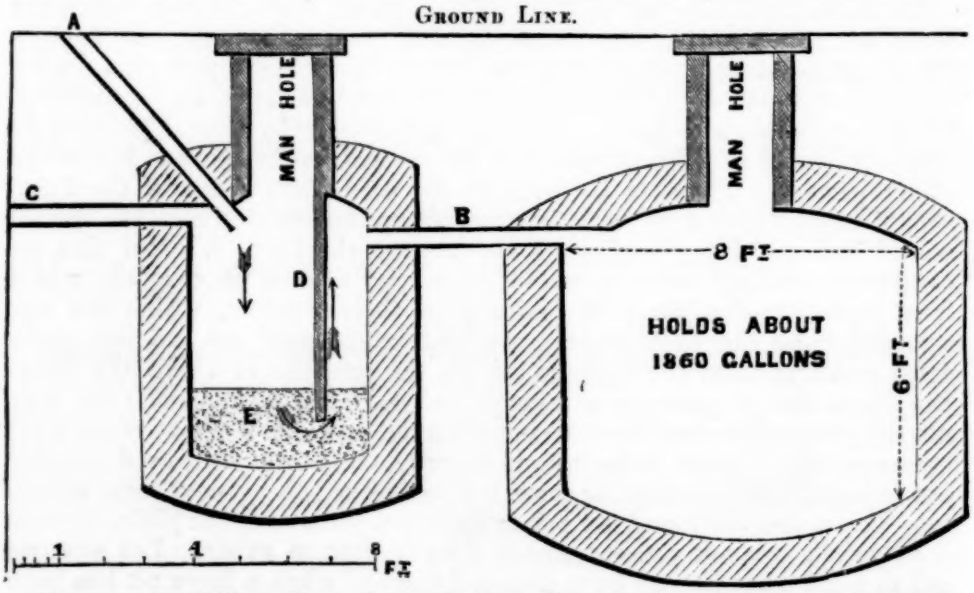
STORING POTATOES.

Potatoes for house-use kept in prittles, (large open baskets which the bottle merchants use,) become mealy and of peculiar and fine flavour. Every gardener will agree that the first and strongest pods and plants should be selected for seed—the directions in the oldest books counsel this. Great care is taken to keep pulse and seeds dry, why should potatoes be solely subjected to different and to a bad system? to be put into heaps and under ground. Those to be reserved for seed, (and these of the best,) should be protected from both frost and damp, but in fine weather the air should be enabled to pass through and around the heap, in order that the constantly exuding moisture might be carried off. It is carefully wiped from pears, apples, &c.; in Malta from their oranges, which are also wrapped in an absorbent paper. In Madeira, bananas are put into perforated casks, to allow the damp to escape, the retention of which, the writer has found, and for years, to be most prejudicial to the future seed; and may not the plants therefrom become more tender, and less able to resist what otherwise might make little or no impression on them? Carrots, &c., could not be kept if subjected to the same bad contact which potatoes must submit to. The writer has found the potato disease wheresoever the pitting system is followed; it is not present where the dry process exists. Let any one call to mind what he may have seen and smelled when a large pit has been opened. Not a tuber would shoot or a potato be lost by the dry process. A trial of the prittles (holding fully 1½ sack each) will prove how much the flavour of the potato is improved by the dry process; and the barn floor could be easily arranged by the large growers to preserve all the seed they require.

There are 5800 taverns in the State of New York, 253,000 farmers, 51,000 merchants, 13,000 manufacturers, 125,000 mechanics, 3500 lawyers, 4000 doctors, and 4300 preachers. Here are 68,600 non-producers who live on the farmer, the manufacturer, and the mechanic. The merchant is a mere go-between to exchange the products of their industry. The lawyer helps them from litigation into limbo. The doctor from this world to a better—sometimes.

RAIN-WATER TANK FILTER.

The following is a description of the filter attached to my underground tank. The tank itself is about 5 yards long, 10 feet wide, and 7 feet deep. The filter is attached to one end of it, and consists of a chamber as long as the tank is wide, the same depth as the tank, and about 4 feet 6 inches wide. It is divided into two equal parts by a wall, through which, at the bottom, is an opening about 12 inches high by 18 inches. Just above this opening is fixed in one of the compartments, a false bottom of iron, perforated with half-inch holes, and upon that plate is packed the filtering materials, as follows: 1st, coarse gravel, 2 feet; 2d, charcoal, 10 inches, upon which is spread a piece of coarse blanket or drugget, and upon that about 18 inches of fine gravel. Three similar layers may be placed in the other compartment, but I do not consider it necessary. Into this latter compartment the foul water from the roofs, &c., flows; it then passes through the opening in the partition wall into the other compartment, rises up through the false bottom and filtering materials, and flows through a delivery pipe into the tank. This pipe must of course be a little below the level of the supply pipe. The tank and filter are built of brick, and well cemented inside. The former is arched over. *T. W. S., Cheshire.*—I have had the following plan of a filter in use for some years, and the water is always sweet and fit for use. The filter requires to be cleaned once in the year.—*J. H. N.*



Reference to Wood Cut.—A, supply pipe; B, connecting pipe; C, waste-pipe; D, stone or brick tongue, built across filter tank to within 6 inches of the bottom; E, filter, composed of gravel and charcoal.

We had intended for this number a very pregnant and interesting dissertation from Mark R. Cockrill, Esq., of Tennessee, on "Cotton Mills by Cotton Growers, Export Duty on raw Cotton and Price of Cotton," but our pages being preoccupied, and wishing to prefix to his suggestions some views which in the press of the moment we have not time to express, we are forced to postpone it until January, when we propose to enrich our journal with essays from the same pen, on the two great subjects of Cotton and Wool Husbandry—each of them adapted to the South, and each to be enhanced and made more prolific by bringing the loom to take its place by the side of the plough.